TZHEF08 Embedded DVR User Manual

Digital Video Network Surveillance System

TZHEF08 series Net DVR
User Manual
(V2.0)

Thank you for purchasing Unisight Embedded DVR. This manual applies to TZHEF08 Series Net DVR. Please read it carefully for the better use of the product.

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Further information can be found on the following website: www.unisight.net

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Chapter1 Product Introduction

1.1 Summary

TZHEF08 series network digital video recorder is an excellent digital surveillance product. It uses the embedded MCU and Linux, combining the most advanced technology in Information Industry such as video and audio encoding/decoding, hard disk record and TCP/IP. The firmware is burned in the flash, more stable and reliable.

TZHEF08 series device has both the features of digital video recorder (DVR) and digital video server (DVS). It can work stand alone, also be used to build a powerful surveillance network, widely used in bank, telecommunication, transportation, factories, warehouse, irrigation, etc.

1.2 Features

Compression

H.264 video compression algorithm (PAL is 25FPS and NTSC is 30FPS).

Support multi-zone motion detection.

Support mask function to mask sensitive area.

Support view tampering alarm function for spiteful camera block.

Support video signal loss alarm function.

Support position configurable OSD&LOGO.

Support both constant bit rate and variable frame rate.

Storage function:

2 SATA interface for 2 HDD. The HDD can be supported 2000GB maximum.

Support HDD S.M.A.R.T function.

Support FAT32 file system.

Support many record mode: all time record, motion detect record, external alarm record, motion & alarm record, motion | alarm record, manual record.

Support cycle and non-cycle record mode.

Support USB flash disk, USB hard disk and USB CD/DVD for backup.

Preview & Playback function:

Support one composite video output and one spot video output
Support playback fast, slow, pause, forward, backward, frame by frame, etc.
Use define preview layout.
Support one channel playback

Network function:

Support TCP, UTP, RTP, Multicast, DHCP, etc.
Support ADSL (PPPoE) dialup function.
Remote parameters setup.
Remote playback, download the recorded files in DVR.
Remote upgrade DVR firmware.
Remote control PTZ.
Support Internet Explore for network control
Remote get alarm information of DVR.

Others:

Support network voice talk.
Support PTZ local and remote control.
Support multi-lever user management.
Support local and remote search log function.
Automatically recovery from exceptions leads to high reliable.
Provide SDK and demo source code to shorten the application development time.

Chapter2 Installation

Warning: Before you install the DVR, please make sure the power of DVR is switched off.

2.1 Checking the DVR and Its Accessories

When you get the product, check that all the items are included in your product package. There is a list in the package. If any of the items is missing, please contact your dealer.

Chapter3 Operational Instructions

3.1 Front panel introduce

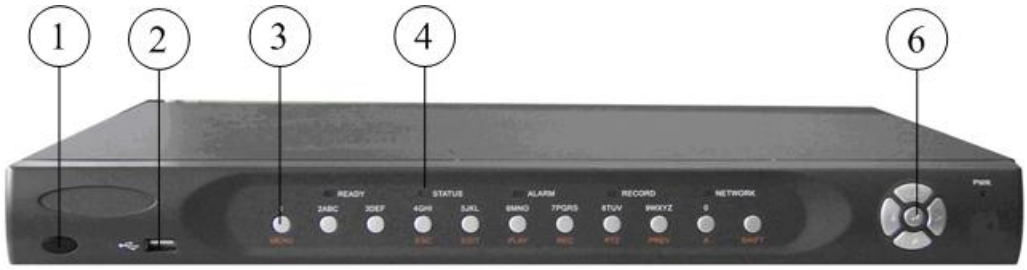

Fig 3-1 Front panel introduce

Form 3-1 Items on front panel

Index	Type	Name	Description
1	Lamp		IR receiver.
2	USB		USB interface
3	Numeric Keys		Input number, lower case, upper case character and symbols.
	Function Keys	MENU	1. Switch preview mode into menu; 2. Brush control short key**[**WIPER**]**. 3. Press **[**MENU**]**for more than 5 seconds to cancel button beep sound.
		2	**[**ZOOM-**]**in PTZ control.
		3	**[**ZOOM+**]**in PTZ control.
		ESC	Cancel and back to parent menu.
		EDIT	1. In edit state, delete the current cursor character; 2. **[**IRIS+**]**in PTZ control; 3. Select ✓ or × to enable or disable.
		PLAY	1. Local playback; 2. **[**AUTO**]**in PTZ control.
		REC	1. Manual record; 2. **[**SHOT**]**in PTZ control (adjust preset).
		PTZ	1. Enter into PTZ control mode; 2. **[**IRIS-**]**in PTZ control..
		PREV	1) Multi screen preview switch; 2) Switch menu mode into preview;
		A	**[**FOCUS-**]**in PTZ control.
			1. Input switch (number, lower case, upper case and

			symbol); 2. [FOCUS+]in PTZ control; 3. In preview mode, display or hide the channel status bar.
		SHIFT	Switch between numeric keys and function keys
4	State Lamps	READY STATUS ALARM RECORD NETWORK	DVR is ready. Green means you can use IR remote control. Red means there is alarm. Twinkle in red means reading or writing HDD. Network status.
5	Control Keys	Direction Keys	Composed of [↑],[↓],[←] and [→]. 1. Menu mode, use[←]/[→] select,[↑]/[↓] to edit; 2. PTZ direction control; 3. Playback speed control.
		ENTER	1. Menu confirmation; 2. Select ✓ or × to enable or disable; 3. Pause playback.

3.2 IR Controller

Fig 3-2 IR elevation

Form 3-2 Instruction of IR

Index	Name	Description
1	POWER	Turnoff device.
2	DEV	Enable/Disable IR remote control
3	Numeric Keys	Same as numeric keys of front panel.
4	EDIT	Same as EDIT key of front panel.
5	A	Same as A key of front panel.
6	REC	Same as REC key of front panel.
7	PLAY	Same as PLAY key of front panel.
8	INFO	Same as INFO key of front panel.
9	VOIP	Same as VOIP key of front panel.
10	MENU	Same as MENU key of front panel.
11	PREV	Same as PREV key of front panel.
12	Direction Keys ENTER	Same as direction keys and enter key of front panel.
13	PTZ	Same PTZ key of front panel.
14	ESC	Same as ESC key of front panel.
15	Reserved	
16	F1	Same as**[**F1**]**key of front panel.
17	Lens control	IRIS, FOCUS ZOOM for lens control.
18	F2	Same as**[**F2**]**key of front panel.

Loading the batteries into the IR controller

1. Remove the battery cover.
2. Insert the battery. Please take care that the poles (+ and -) are correctly positioned.
3. Replace the battery cover.

Start to use IR controller

Switch the device power on, wait without any operations until preview screen appears, and then you can use IR remote control to manage DVR on condition that the device ID is default “255”, which can be changed in “Display” menu.

If the default device ID has been changed, please press [Power] & [DEV] key of IR remote control, input the present device ID and then press [ENTER] key. Then you can use IR remote control to operate this DVR.

Stop using IR controller

When IR controller status is on, press **[**DEV**]**key again, the “STATUS” lamp will be turned off. The IR controller can not control this DVR.

Switch the DVR off

Turn off the power switch directly.

When IR controller can not work normally

Check batteries poles.
Check the remaining charge in the batteries.
Check IR controller sensor is mask.
Please change another IR controller to try again. It the problem is still existed, please contact administrator.

3.3 Menu Description

3.3.1 Menu Items

Form 3-3 First Glance at menu

Menu Name	Function	Menu Name	Function
Dis play	Unit name Device ID Require password Screen saver Video standard Enable scaler Brightness Menu transparency VGA resolution Date and Time Preview	**Image**	Select camera Camera name Color setup Date OSD position View tampering area and response setup Video signal loss Motion detection on/off area and policy Advanced setting Copy to camera
Recording	Overwrite/Stop recording Select camera Stream type Resolution Frame rate Bit rate Enable Rec & Schedule PreRec time PostRec time Copy to camera	**Network**	DVR IP address DVR port Sub net mask Gateway Remote host IP and port Remote host port http Port Email Advanced setup
Alarms	Select Alarm in Alarm input type (Normal open/ Normal close) Alarm handling & policy & PTZ linkage Copy to alarm in Alarm out & time Alarm out schedule Copy to alarm out	**PTZ**	PTZ parameters Preset setup Sequence setup Cruise setup

	Exceptions		
User Password	Add or delete user Password setup or modification User rights setup	**Utilities**	Restore parameters Upgrade firmware HDD management Stop alarm output Reboot View log System information

3.3.2 Menu Operation

How to enter into menu mode

1) Press **[**MENU**]** key to enter into DVR main menu.
2) Press **[**PLAY**]** short key to enter into playback menu.
3) Press **[**REC**]** short key to enter into manual record menu.
4) Press **[**PTZ**]** short key to enter into PTZ control interface.

Notes: You must input user name and password. The default user name is "admin" and password is "12345".

Main Menu Description

The main menu interface is shown as fig 3.3:

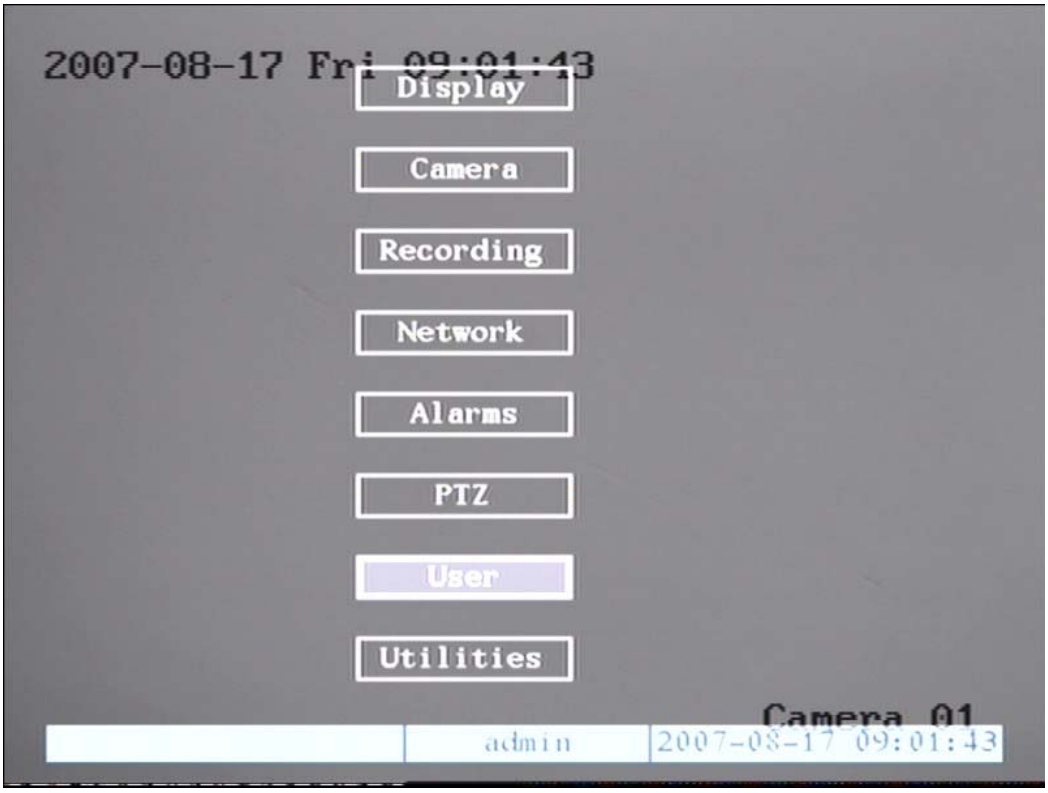

Fig 3.3 Main menu

There is one small frame named "Active Frame". It can be moved from one item to another by using direction keys (**[**↑**][**↓**]**). When the "Active Frame" is located on one icon, you can press **[**ENTER**]**key to enter into the sub menu. For example, move the "Active Frame" to "Image" icon, press **[**ENTER**]** to enter into the sub menu as following fig 3.4:

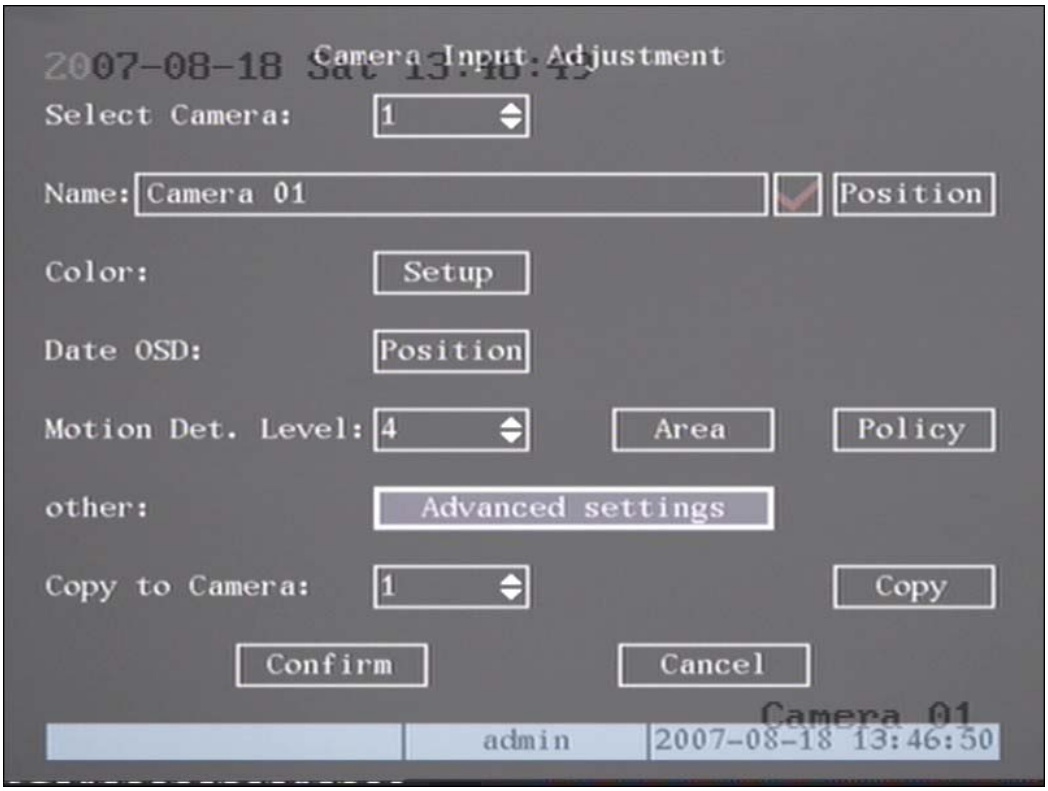

Fig 3.4 Camera input adjustment

Each menu contains different kinds of items. There is a small rectangular frame named "Active Frame" which is pointing to the selected item. This "Active Frame" can be moved by direction keys (**[**↑**][**↓**][**←**][**→**)**. There are several kinds of menu items as following:

1. Check Box: Provides two options, "✓" means enable and "×" means disable. You can use **[**ENTER**]**or**[**EDIT**]**key to switch over.
2. List Box: Provide more than 2 options. However, only one of them can be selected. After pressing **[**EDIT**]** you can use**[**↑**]**and**[**↓**]**to select one option. For example, on the right side of "Select Camera", there is a list box for you to select one camera.
3. Edit Box: This is for you to input characters. Press**[**EDIT**]**key to enter into edit status, you can input text here:
   a) Press**[**A**]**key to select number, upper case, lower case or symbols;
   b) Use**[**→**]**and**[**←**]**keys to move cursor;
   c) Use **[**EDIT**]**key to delete the character in front of cursor;
   d) Press **[**ENTER**]** to save & exit or**[**ESC**]**to exit without saving.
4. Button: Trigger a special function or enter into next sub-menu. For example, press "Policy" button to enter into sub-menu. Press **[**Confirm**]** to

save parameters and return to parent menu. Press **[**Cancel**]**button to cancel and return to parent menu. The button in grey means it can be operated only after it is enabled.

How to exit menu

Press **[**PREV**]**key to exit menu and return to preview mode.

3.4 Input text

In the menu interface, if you are in edit status (for example, in the "camera name" edit box), at the bottom of screen, the input status is appeared:

Here it means you can press numeric keys to input digital number.

Press**[**A**]**key to change input methods. You can select "number", "Uppercase", "Lowercase" or "Symbol".

Uppercase

Lowercase

Symbol

There are 24 symbols in all. They are divided into 4 pages, and you can use**[**0**]**key to turn over page.

Chapter4 Basic Operation Guide

4.1 Power on

Note: Please make sure the power supply matches DVR and AC adapter connected correctly. Before switch DVR on, please connect one monitor with VOUT or VGA interface. Otherwise, you can not see graphic user interface and can not operate.

Turn on the power switch in the rear panel.

When DVR is started,**[**POWER**]**lamp is in green. On the monitor or VGA display, DSP and HDD initialization process will be shown.

The first line represents DSP initialization. If the DSP icon is "×", it means that the DSP is initialized error, please contact administrator at once.

The second line represents HDD initialization. If the HDD icon is "×", it means the corresponding HDD is not installed or not detected. If HDD is not detected, please contact administrator.

Note: If HDD is not installed or not detected, DVR will beep for alarm. You can disable the buzzing in "alarm" menu ->"Exceptions" option.

4.2 Preview

DVR will enter into preview mode after it is started.

On preview screen, you can see date, time, camera name and camera status icon.

Set system date and time in "Camera" → "Date OSD" menu, please refer to 5.5; Change camera name in "Camera" menu, please refer to 5.5

In the screen, it will display record and alarm status of each camera. Shown as fig 4.1, These two kinds of status will switch over automatically.

Press **[**A**]** key to display or hide the camera status bar.

Fig 4.1 Recording status

Form 4-1 Camera record status

Icon	Icon Color	Status Description
1	White	No video signal
	Yellow	Video input
	Pink	Manual recording
	Green	Real time recording
	Blue	Motion detect recording
	Red	External alarm recording

Fig 4.2 Alarm status

Camera alarm status is following:

Form 4.2 Camera alarm status

Icon	Icon Color	Status Description
	White	Video signal lost
	Yellow	View tampering alarm
	Pink	Motion & External alarm
	Green	No alarm
	Blue	Motion alarm
	Red	External alarm

Press numeric keys to switch over individual camera preview. For example,

press**[**2**]**key to preview 2nd camera.

Press**[**EDIT**]**key to manual cycle preview. You can set the auto preview mode in "Preview" menu, referring to 5.11.

Press**[**PREV**]**key to switch multi-screen preview.

4.3 User name and password

Note: When DVR is delivered from factory, there is only one default administrator named "admin", and password is "12345". The administrator's name can not be modified, while the password can be modified. The administrator can create 15 users and define their user rights.

Login

Login dialog is following Fig 4.3

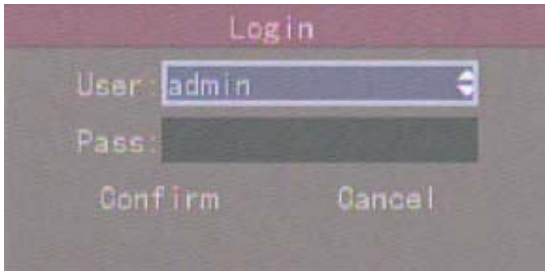

Fig 4.3 Login dialog

Use**[**↑**]**/**[**↓**]**keys to select one user, press**[**→**]**key to enter into "Password" edit box, input corresponding password, press**[**ENTER**]**key to exit edit box. The "Active Frame" will be moved to "Confirm" button. Press**[**ENTER**]**key to enter into main menu. If there is buzzing alarm, it means the user name and password are not matched. After three error times, DVR will enter into preview mode.

Modify password

For those users created by admin, they can modify their password as following:

Step1: Enter into main menu

Press**[**MENU**]**key, in the login dialog, select your user name, input the correct password, you can enter into the main menu. As Following pictures shows.

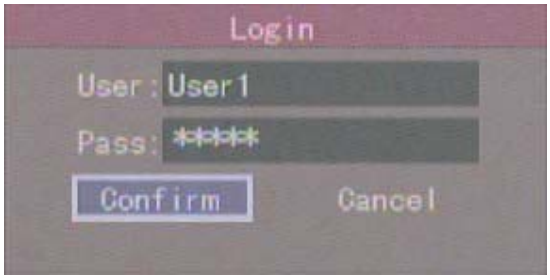

Fig 4.4 Input password

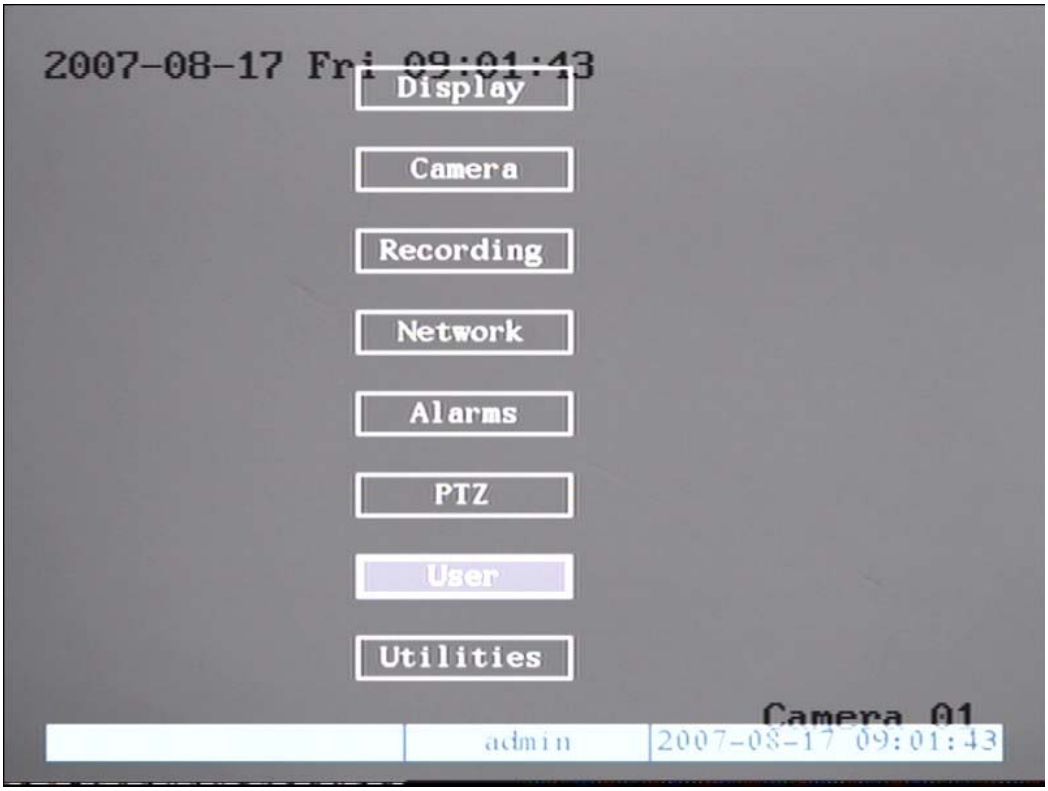

Fig 4.5 Main menu

Step 2: Select the objective user name by using **[↑],[↓]** then move the "Active Frame" to "Password" icon by using**[→]/[←]**keys. As fig 4.6 shows.

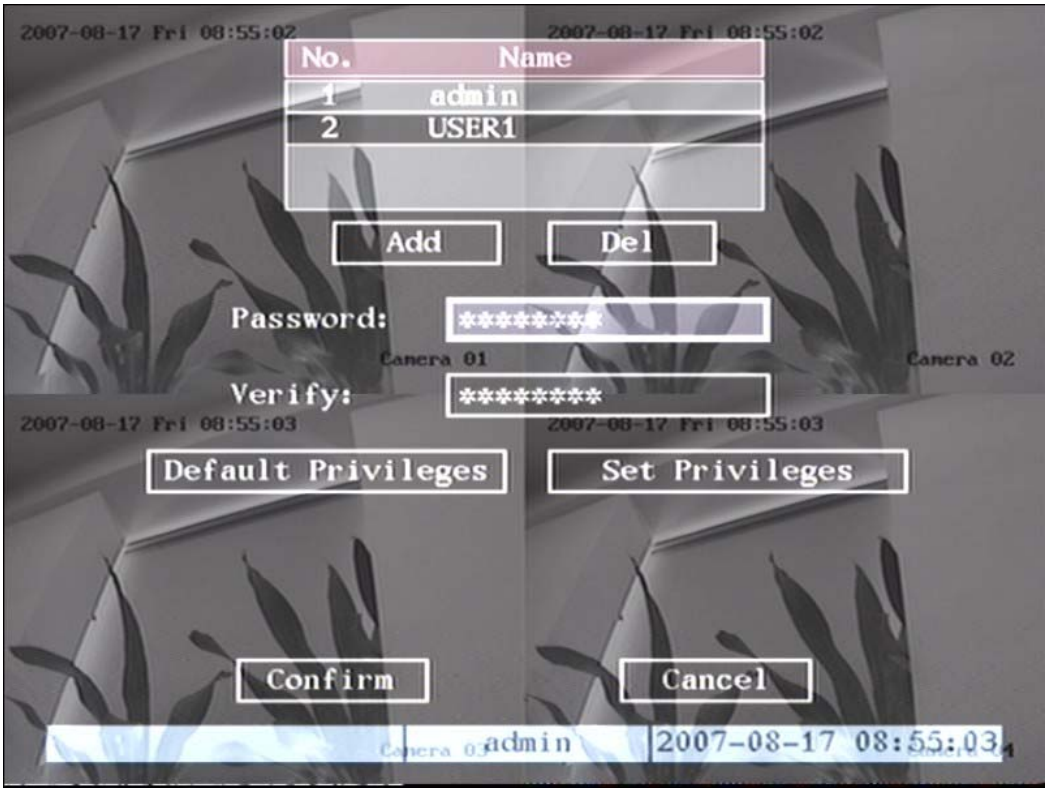

Fig 4.6 Modify users' password

Step 3: Input new password

Use numeric keys to input new password. The password can be null. It also can be 16 numerals. Press**[**ENTER**]**to exit edit box, and move to "Verify" item to verify password.

Note: In edit box, use [→]/[←]to move cursor and[EDIT]key to delete the numeral in front of the cursor.

Step 4: Modify password successfully

Move the "Active Frame" to "Confirm" button, press**[**ENTER**]**key. If the password is modified successfully, you will turn to the main menu. Or an error dialog will be pop up. You can repeat step 3 to modify again.

4.4 PTZ Control

Note: The user must have the "PTZ control" right.

PTZ control interface

In preview mode, press**[**PTZ**]**key, in the login dialog, select one user name and

input the correct password, you can enter into PTZ control interface.

In menu mode, press**[**PTZ**]**key, you can enter into PTZ control interface directly. Shown as following picture.

Fig 4.7 PTZ Control interface

Currently controlled camera's name is displayed which the position is defined by yourself.

Select channel

In PTZ control mode, you can press numeric keys to select channel. For example, press**[**2**]**key to select the second camera PTZ.

After you select the camera PTZ, you can use the control keys to control PTZ.

PTZ control keys description

Direction control keys: **[**↑**]**,**[**↓**]**,**[**←**]**,**[**→**]**;
ZOOM control keys: **[**ZOOM+**]**,**[**ZOOM-**]**;
FOCUS control keys: **[**FOCUS+**]**,**[**FOCUS-**]**;

IRIS control keys: **[**IRIS+**]**,**[**IRIS-**]**;
Adjust preset keys: **[**REC/SHOT**]**;
Auto control key: **[**PLAY/AUTO**]**;
Wiper control key: **[**WIPER/MENU**]**;
Light control key: **[**LIGHT/F1**]**;
Auxiliary device control key:**[**AUX/F2**]**

Adjust preset description

In PTZ control mode, press**[**REC/SHOT**]**key, and press the preset number (three numeric keys), DVR will adjust the corresponding preset number. Repeat pressing**[**REC/SHOT**]**key, and press the preset number, DVR will adjust that preset number.

When you exit PTZ control mode, the camera will stay at the current position.

Note: The PTZ preset number is set already. Please refer to PTZ menu for preset setup. V2.1 firmware can support 128 preset at most.

Start/Stop auto in PTZ control mode

In PTZ control mode, press**[**PLAY/AUTO**]**key to start PTZ auto function. Press**[**PLAY/AUTO**]**key again to stop.

When PTZ is in auto mode, if you exit PTZ control mode, PTZ will continue auto function unless you enter into PTZ control mode again, and press**[**PLAY/AUTO**]**key to stop.

Exit PTZ control mode

Press**[**ESC**]**or**[**ENTER**]**to exit and return preview mode.

4.5 Manual Record

Note: The user must have the corresponding right, DVR has HDD and HDD is formatted already.

Manual record

In preview mode, press**[**REC**]**key, in the pop-up login dialog, select the name and input the correct password, you can enter into the “Manual Record” interface.

In menu mode, press**[**REC**]**key to enter into “Manual Record” interface directly.

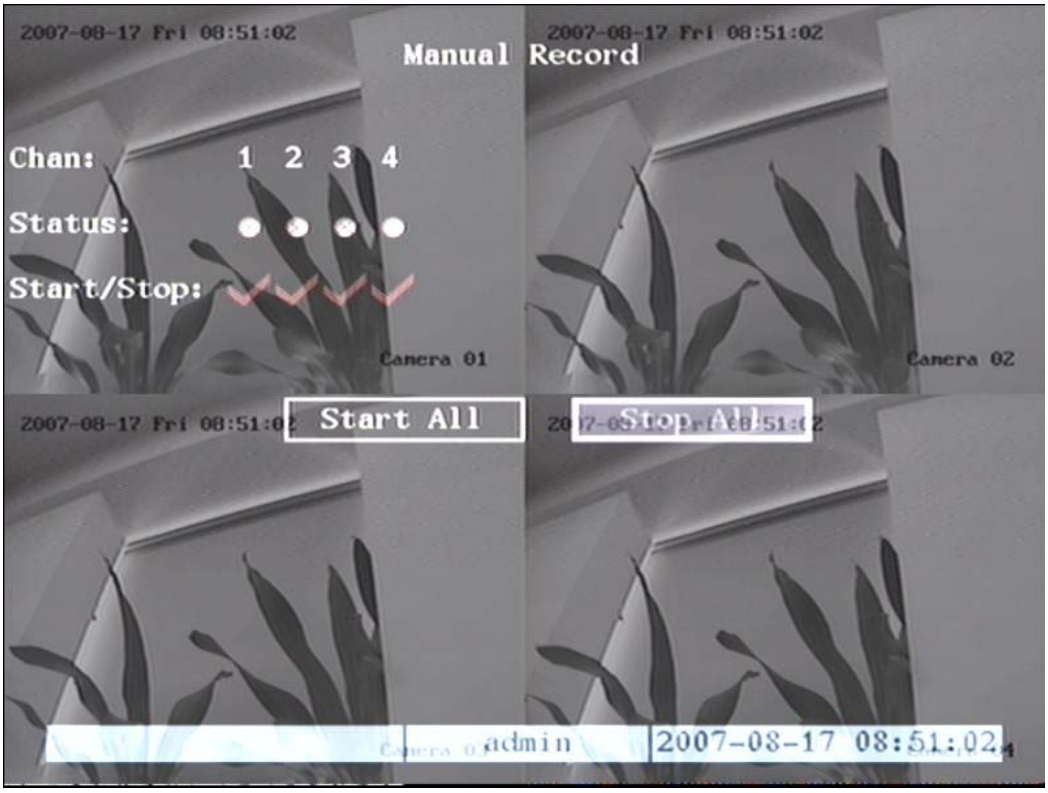

Fig 4.8 Manual record interface

Description

Manual record interface has following parts: channel number, channel status, start/stop record, start all and stop all buttons.

Channel: List the channel number that DVR has.

Status: Channel work status has 4 cases: ⊗ means idle. Green means the channel is recording (including real time recording, alarm recording, motion detection recording). Red means network transmission. Orange means both recording and network transmission.

Start/Stop: "✓" means you can start corresponding channel recording. "×" means you can stop recording.

Start All: Press this button to start all channels recording.

Stop All: Press this button to stop all channel recording.

Press**[**ESC**]**key to enter into preview mode. Press**[**MENU**]**key to enter into main menu. Press**[**PLAY**]**key to enter into playback menu. Press**[**PTZ**]**key to enter into PTZ control mode.

4.6 Playback

Note: The user must have "Playback" right.

Playback interface

In preview mode, press**[**PLAY**]**key, in the pop-up login dialog, select username and input correct password, you can enter into "Playback" interface.

In menu mode, press**[**PLAY**]**key, you can enter into "Playback" interface directly. Show as Fig 4.9(The two screen play back function may canceled ,so the second channel option may not displayed)

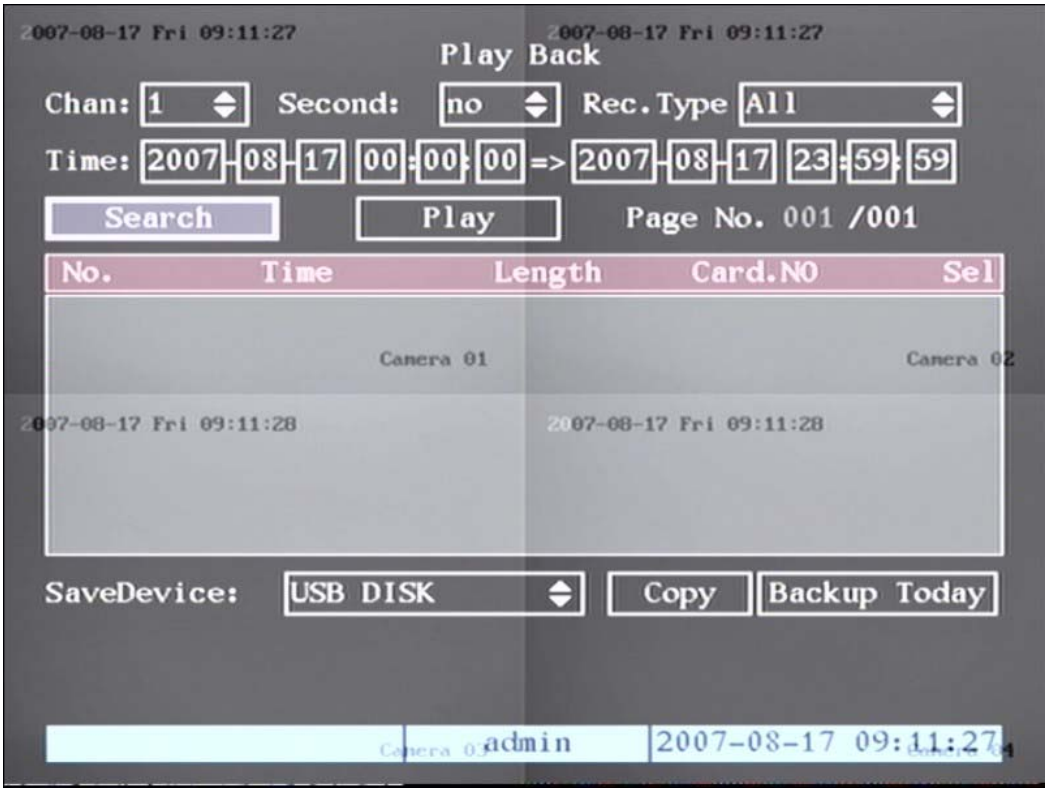

Fig 4.9 Playback interface

Description

Select a Channel: Move the "Active Frame" to "chan", press "edit" button, then use**[**↑**]**or**[**↓**]**key to select a channel.

Rec Type: Use**[**↑**]**or**[**↓**]**to select recorded files type. The file type options have "All", "All Time", "Motion Detect", "Alarm" and "Manual".

Time Section: You can define the search time section. Move "Active Frame" to the time edit box, use numeric keys to input the detail time.

Search: Search the matched recorded files and display them in the list box. If there is not matched file, a corresponding dialog box will be pop-up.

Play by Time: Playback the recorded stream directly based on the time section.

Select Page: In the file list box, each page will only display 8 files. If the matched files are more than 8, you can select page to list other files. 500 pages (4000 files) can be searched in one time. You can use numeric keys or **[↑][↓]**keys to select page.

File List Box: List the matched files. File started time, file size are displayed in the list box. You can use**[↑][↓]**keys to move the scroll bar to select file.

Backup Devices: You can select USB flash, USB HDD, USB CD-R/W to backup the files or clips.

Copy: Start to backup.

Backup Today: Backup all recorded files of today.

Operation when playback

Fig 4.10 Playback interface

At the bottom of image, there is an information bar and the following information is included: Volume, Play Progress, Play Speed, Played Time and File

Total Time.

Display/Hide information bar: **[**MENU**]**

Open/Close sound: **[**PLAY**]**

Adjust play progress: **[**←**]**(Backward),**[**→**]**(Forward). The unit is "%".

Adjust play speed: Normal speed is "1x". Use **[**↑**]**to increase play speed (2X, 4X, 8X and MAX). Use**[**↓**]**to decrease play speed (1/2X, 1/4X, 1/8X and single)

Pause/Continue: Press **[**ENTER**]**to pause/continue playback. If played frame by frame, Press**[**ENTER**]**to play one frame.

Copy segment:**[**EDIT**]**;Stop copy: **[**EDIT**]**(Need a back up device to store the segment)

Exit: **[**ESC**]**

Note: When DVR is busy, if you select high play speed, maybe there is difference for actual play speed.

Exit playback

In playback interface, press**[**ESC**]**key to enter into preview mode.

In playback interface, press**[**MENU**]**key to enter into main menu, press**[**REC**]**key to enter into manual record, and press**[**PTZ**]**key to enter into PTZ control mode.

Playback with mouse plunged

If you playback with a mouse plunged, the interface will be a little different. And you can acquire more functions to operate in the playback course. Shown as following fig 4.11.

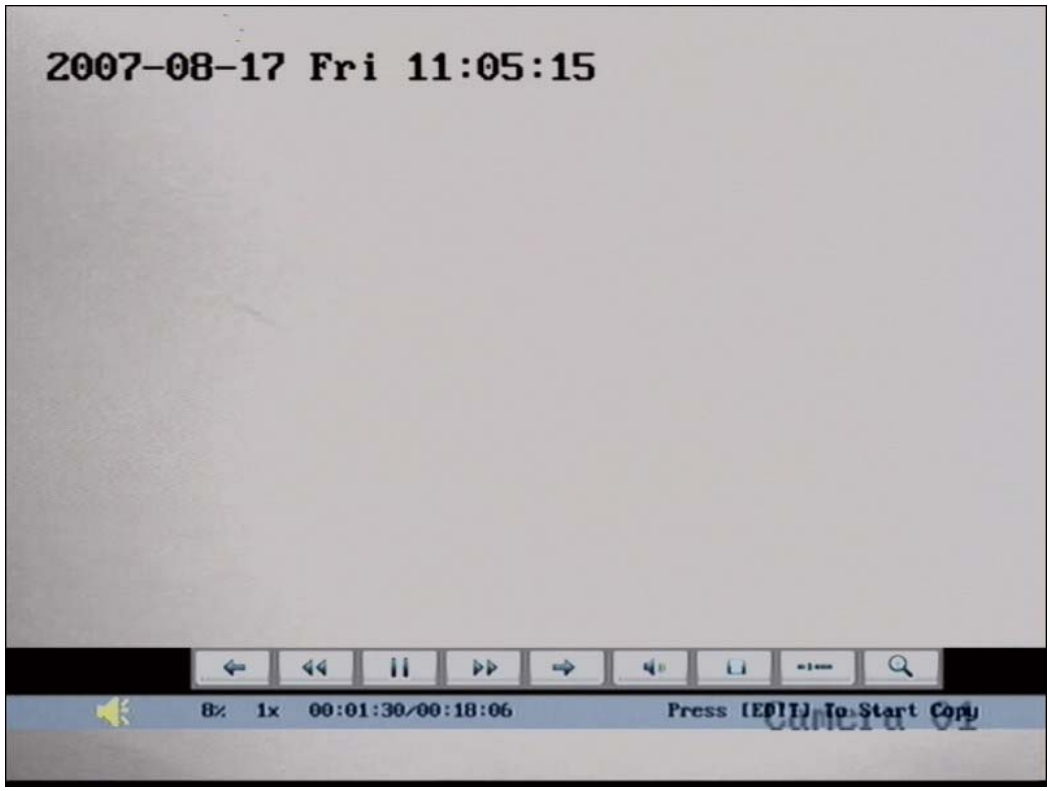

Fig 4.11 Play back control bar

There is an additional bar appears. We call it control bar.

Control bar descriptions:

: You can click these buttons to skip backward or forward 3% each time.

: You can click these buttons to select the play speed

: Click this button to pause.

: Click this button to be mute, click it again to recover the sound.

: Click this button to start copy the segment, click it again to stop.

: Click this button to hide the control bar, right click your mouse and select display to display the control bar.

: Click this button will trigger a rectangle area on the screen ,draw the rectangle with left key of your mouse to the area you want to zoom in then double click left key to zoom in that place. Click left key again to return to the playback interface.

4.7 Backup Recorded Files

Note: The user must have "Playback" right. Please connect with backup devices before you start to backup.

In the playback interface, you can backup the recorded files.

In the preview mode, press**[**PLAY**]**key, in the login dialog, select username and input the correct password, you can enter into the playback interface.

In the menu mode, just press**[**PLAY**]**key, you can enter into playback interface directly.

Backup intraday recorded files

In the playback interface, move "Active Frame" to "Backup Today" button, press**[**ENTER**]**key, all intraday recorded files of all channels will be backup to the save device. A pop-up dialog will display the backup status.

If backup device is not connected correctly or DVR do not detect the backup device, an exception dialog will be pop-up. Please ask administrator for more information.

Backup the files that matched your requirement

Step 1: Search the matched files

In the playback interface, select one channel and record type, input the time section, move "Active Frame" to "Search" button, press**[**ENTER**]**key, DVR will start to find and list the matched files.

Step 2: Select the files that you want to backup

In the file list box, use**[**↑**]**or**[**↓**]**keys to move the scroll bar. When the scroll bar

stays at the file you wan to backup, press**[**EDIT**]**key to select it. The symbol "✓" is the selection tag. You can use the same method to select other files you want to backup. After finish, you can do next step. Shown as following fig 4.12

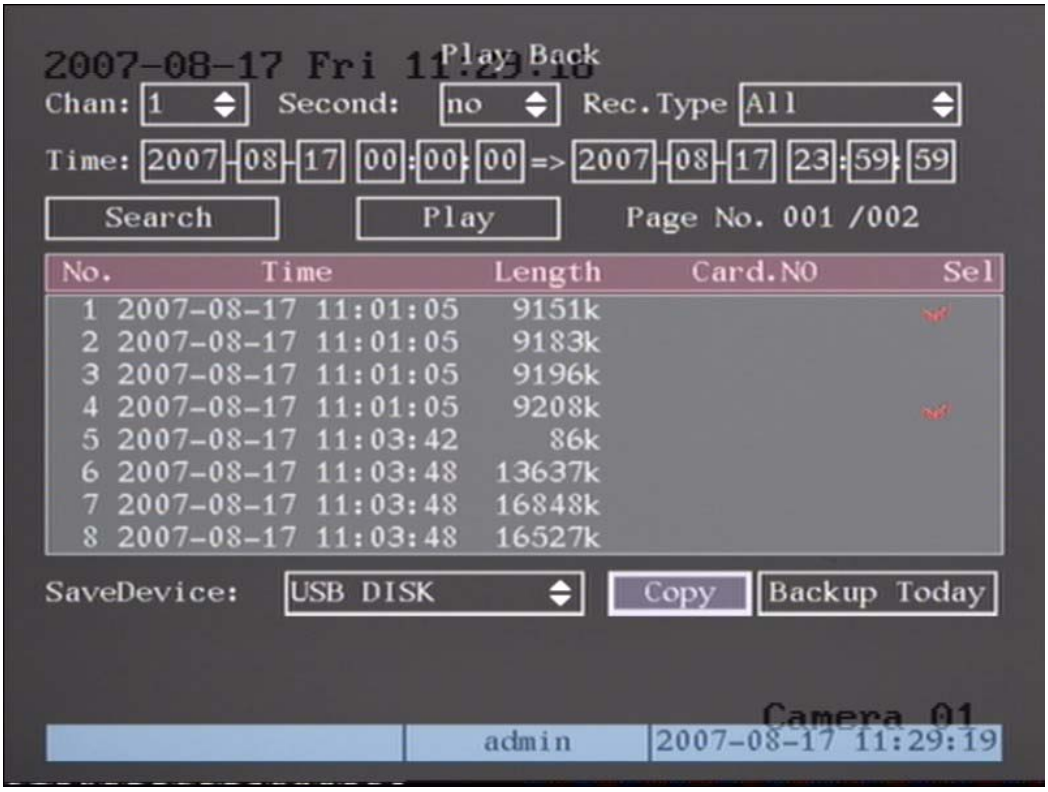

Fig 4.12 Playback list

Step 3: Select backup device

Please confirm the backup device: USB flash memory, USB HDD, USB CD-R/W, and select the corresponding backup device.

Step 4: Start and finish backup

Move "Active Frame" to "Save" button and press**[**ENTER**]**key to start backup.

When backup is started, corresponding message box will pop-up to indicate the result.

Backup video segment

You also can backup the image segments when the image is being playback. The steps are:

1. Enter into the interface of playback the files or playback by time;
2. Press**[**EDIT**]**key to start selecting the current playback image, and press**[**EDIT**]**again to stop selecting. This segment is selected;
3. You can repeat step 2 to select many segments. 30 segments can be selected in all;
4. After you select all segments, press**[**ESC**]**key, a message window will pop-

up. If you press “Confirm” button, DVR will start to backup the selected segments. If you press “Cancel” button, DVR will abort backup.

Playback the video segment

You can use our file player software to playback the video segment in PC. You can find the player software in attached CD.

Exit playback interface

Please refer to chapter 4.6.

4.8 Shut Down DVR

Shut down DVR normally

Use menu

Enter into “Utilities” menu, move “Active Frame” to “Power Off” button and enter into power off dialog, press “Confirm” to make DVR ready for shutting down, then turn off the switch on the rear panel.

Turn off the power switch of real panel directly.

Chapter5 Parameters Setup Guide

Only the users that have “Parameters Setup” right need to read this chapter. When the following parameters are modified and saved, you must reboot the DVR to make the new parameters take into effective. Other parameters do not need to reboot.

5) Any network parameters
6) resolution and record schedule
7) External alarm sensor type
8) View tampering alarm schedule
9) Video lost alarm schedule
10) Motion detection alarm schedule
11) External alarm schedule
12) Alarm output schedule

5.1 Administrator and Password

When DVR is left from factory, there is one default administrator. The name is “admin” and password is “12345”. The name can not be changed, while the password can be.

Password modification

Press**[**MENU**]**key, in the login dialog, select the username as "admin", use**[→]**key, move cursor to password edit box, input "12345", press "Confirm" to enter into administrator menu.

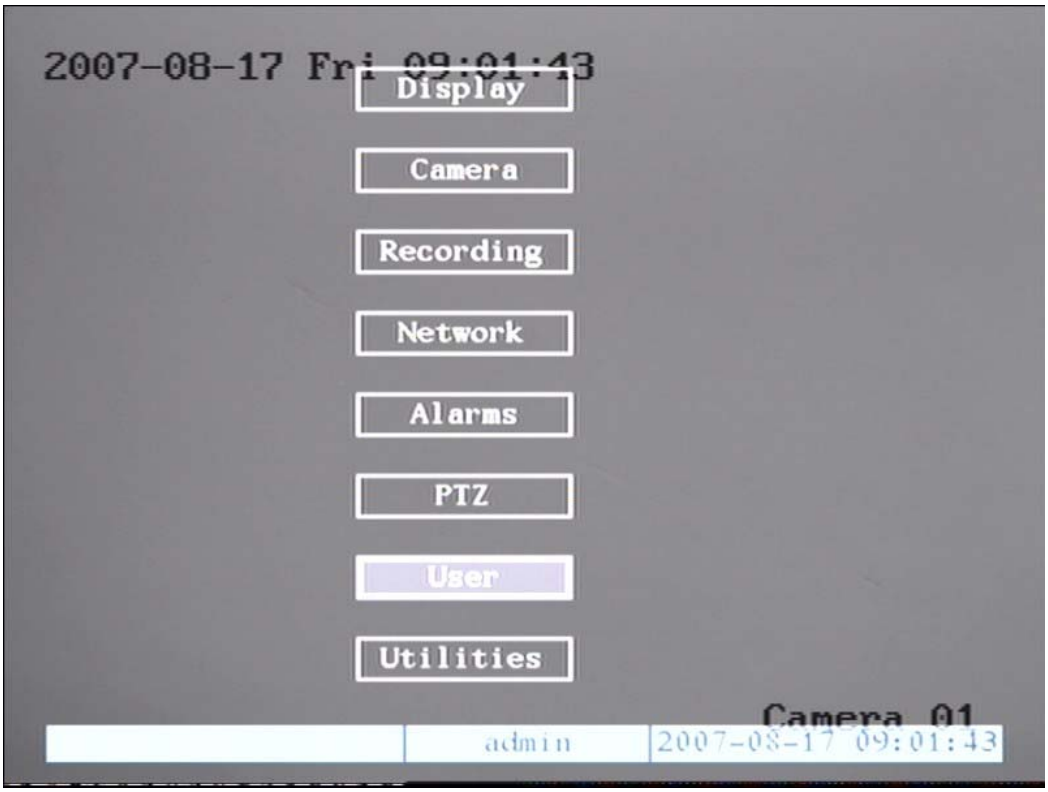

Fig 5.1 Enter into user menu

Move "Active Frame" to "User" icon, press**[**ENTER**]**key to enter into "User Management" menu. Shown as fig 5.2

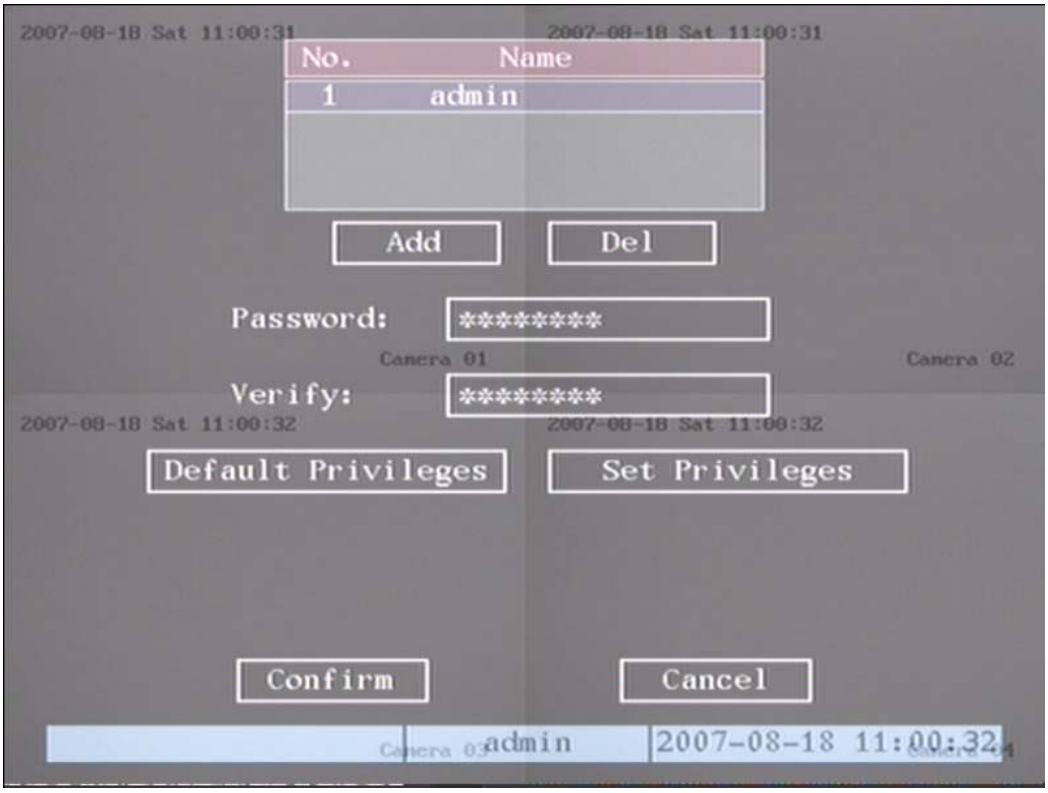

Fig 5.2 User management

In the user name list box, only "admin" is existed. You can use**[**→**]**key, move "Active Frame" to password edit box, and press**[**EDIT**]**key to enter into edit status. Press numeric keys to input the new password. The password is only combined by 16 numerals at most. After you finish inputting password, press**[**ENTER**]**key to exit. Move "Active Frame" to "Verify password" edit box, input the verify password. Move "Active Frame" to "Confirm" button, and press**[**ENTER**]**, if password and verify password are the same, the password will be saved and taken into effective.

If password and verify password are not same, a warning message box will be appeared. Shown as fig 5.3

Fig 5.3 Error

In this case, press**[**ENTER**]**to return password edit box, and input new password

again.

5.2 Add and Delete User

Enter into “User Management” interface.

Add user

The steps are following:

Step 1: Enter into “User Management” menu as fig 5.4

Please refer to chapter 5.1

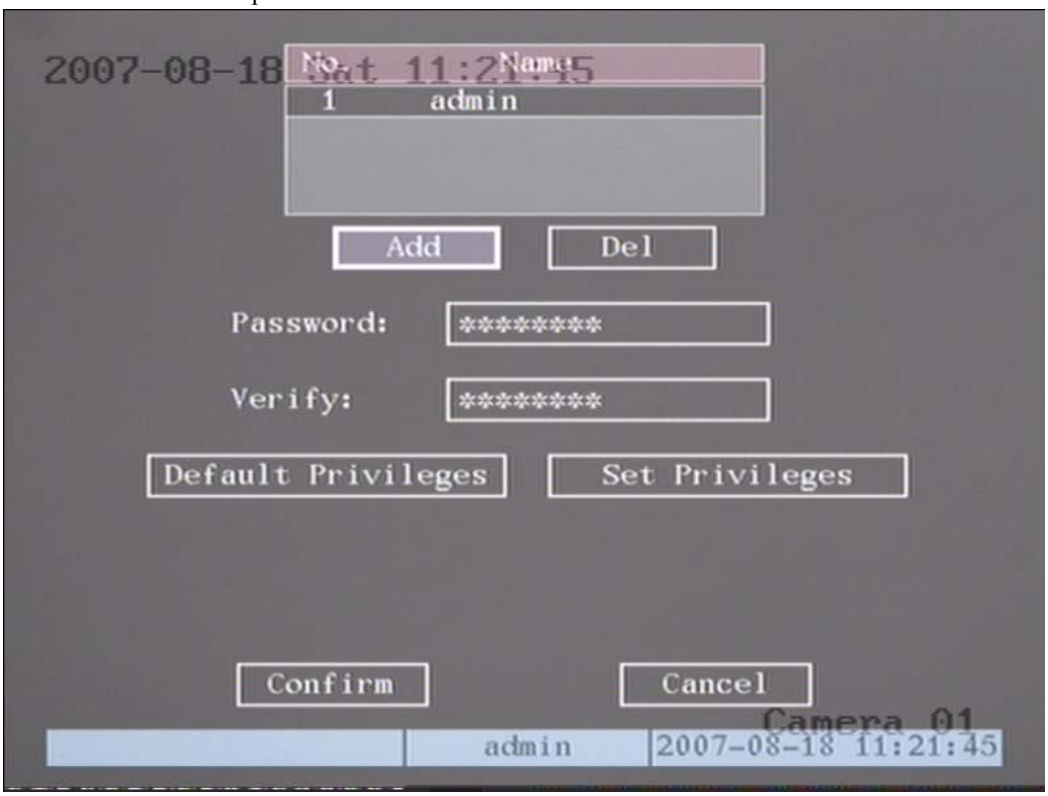

Fig 5.4 user management

Step 2: Add new user name

In the “User Management” menu, move “Active Frame” to “Add” button and press **[**ENTER**]**, in the pop-up dialog, input the new user name (refer to chapter 3.4), press **[**ENTER**]**and return “User Management” menu. Totally 15 users can be added. Shown as fig 5.5

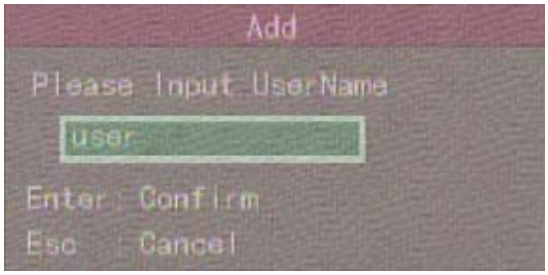

Fig 5.5 Input user name

Step 3: Setup the password for new user

After you add one new user, the password is null. You can skip this step if you do not want to change the password.

In the users list box of "User Management" menu, use**[↑][↓]**keys to select the new user name, then use**[→]**key to the password edit box. Press**[**EDIT**]**key to enter into edit box, use numeric keys to input the new password.

Step 3: Setup the rights for new user

The new added user has not any operational rights. You must setup rights for him.

In the users list box of "User Management" menu, use**[↑][↓]**keys to select the new user name, then use**[→]**key to "Default Privileges" button, press**[**ENTER**]**, the user will have the default rights. The default rights include local playback, remote playback and view log.

If you want to define the detail rights, move "Active Frame" to "Setup Privileges" button and press**[**ENTER**]**to enter into rights setup menu as following: Shown as picture 5.6

Fig 5.6 Set user right

Operational rights are divided into "Local" and "Remote". You can assign the necessary rights to the user. Use**[**→**][**←**]**key to move "Active Frame" to the corresponding right items, press**[**ENTER**]**or**[**EDIT**]**key to enable or disable the item. "✓" means assigning the right to that user.

Step 4: Save the new user's password and rights

In the "User Management" menu, press "Confirm" button, the user's password and rights will be saved and return main menu. If you press "Cancel" button, the configuration will be abandoned.

User rights description

"Local":

Local rights are for local operation, such as the operation using front panel, IR controller and RS-485 keyboard.

PTZ control: Locally control PTZ;

Record: Manual start/stop recording;

Set parameters Setup: Locally setup the DVR parameters;

Log: Locally view the log on DVR;

Utilities: Locally upgrade firmware, format HDD, reboot DVR and shut down

DVR, etc.

"Remote":

PTZ Control: Remote control PTZ;

Record: Remote manual start/stop recording;

Set parameters Setup: Remote setup the DVR parameters;

Log: Remote view the log on DVR;

Utilities: Remote upgrade firmware, format HDD, reboot DVR and shut down DVR, etc.

Talk: Client talks with DVR;

Alarm: Remote control DVR alarm output;

Local Video Out: Remote control DVR video output;

Com Control: DVR RS-232 transparent channel function.

MAC address

This MAC address is not the address of DVR but the PC that will access DVR. If you setup this MAC address, only the PC with this MAC address can access this DVR.

At PC end, in DOS prompt, you can use "ipconfig" command to get the PC MAC address (6 bytes).

Delete user

In "User Management" interface, you can use**[↑][↓]**keys to select one user, then use**[→]** to move "Active Frame" to "Del" button, press**[**ENTER**]**, in the pop-up confirmation dialog, press "Confirm" button to delete the selected user and return. Press "Cancel" or**[**ESC**]**to abort deleting. Shown as fig 5.7

Fig 5.7 Delete user

5.3 Unit Name and Device ID

Unit name

In the "Display" menu, shown as fig 5.8:

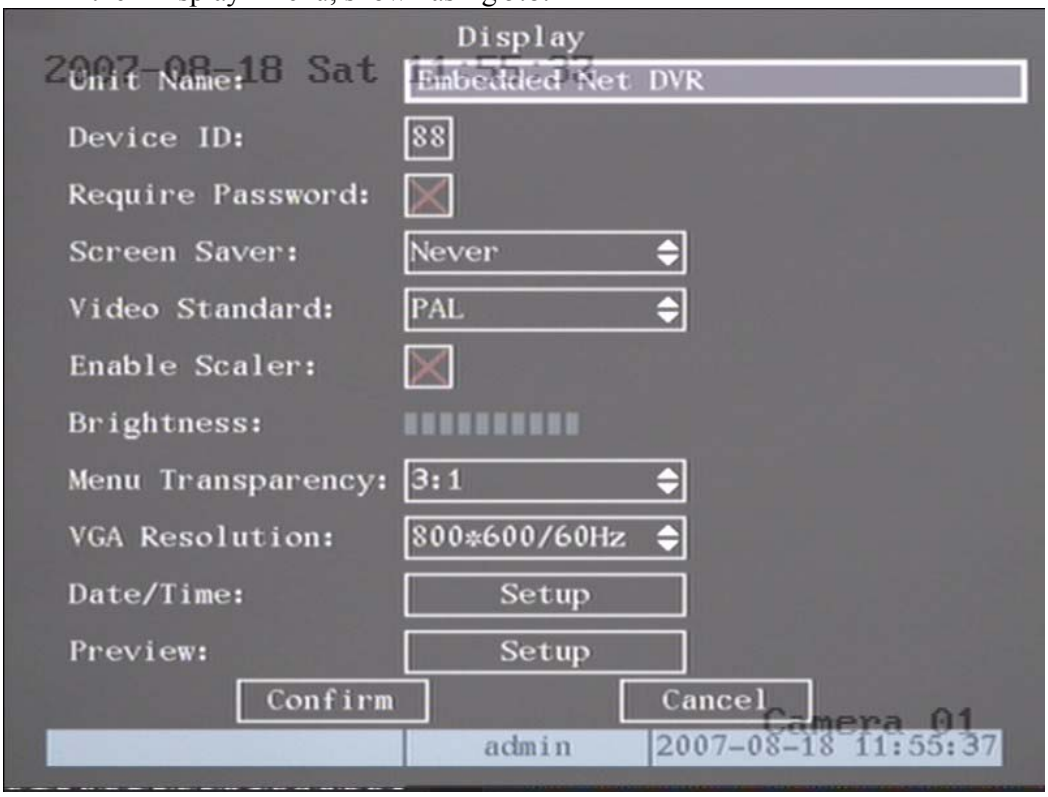

Fig 5.8 Display menu

There is an item named "Unit Name". The default unit name is "Embedded Net DVR". Move "Active Frame" to unit name edit box, press**[**EDIT**]**key to enter into edit status, you can modify the unit name. About how to input characters, please refer to chapter 3.4. Press**[**ENTER**]**key to finish modification. Select "Confirm" button and press**[**ENTER**]**, you can save the new unit name and make it into effect. Press "Cancel" button or**[**ESC**]**key to abort modification.

Device ID:

When you use IR controller to operate DVR, you must use device ID to select DVR. The default device ID of DVR is "255". If there are more than one DVR in one place, please define different device ID for each DVR. Otherwise, the IR controller will control all DVR with the same device ID at the same time.

In "Display" menu, move "Active Frame" to the device ID edit box, in the edit

status, you can use numeric keys to input new device ID. The device ID value is ranged among 01-255.

After you finish the modification, press “Confirm” button to save and take effect or press “Cancel” to abort modification.

5.4 Video Output Standard and VGA Setup

Video output standard

There is one VOUT BNC connector at the rear panel of DVR. It is used to connect with analog monitor and can support PAL or NTSC video output. You can modify video output standard to match video input.

In “Display” menu: There is a list box named “Video Output Standard”, you can use**[↑][↓]**key to select PAL or NTSC video output.

VGA setup

There is one VGA interface at the rear panel of DVR. You can use it to connect with VGA display. You can define VGA resolution, refresh frequency in “Display” menu.

There are following options: 1280*1024/60Hz,1024*768/60Hz, 800*600/60Hz. You can use**[↑][↓]**key to select.

Press “Confirm” button to save or “Cancel” to abort.

5.5 Camera name and OSD Setup

Camera Name

In “Camera” menu, you can define name for each camera. Please notice that camera’s name can not be copied. Shown as fig 5.9

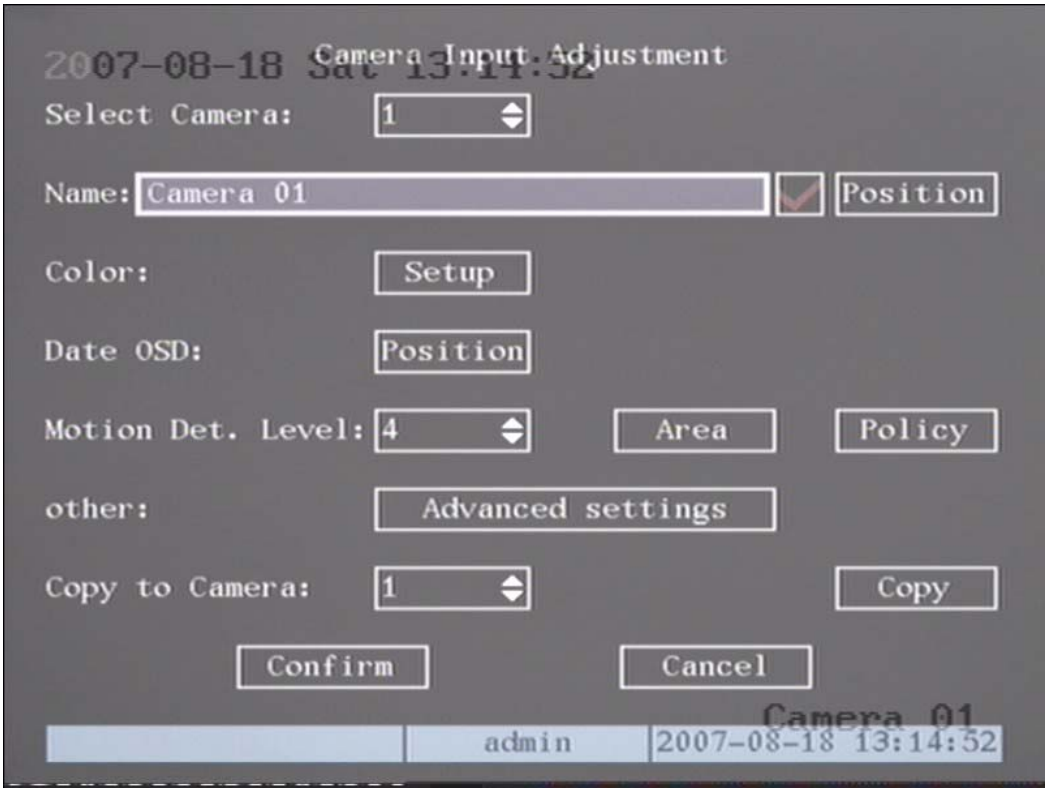

Fig 5.9 Input camera number

The steps of camera name setup:

Step 1: Select one camera.

Step 2: Move "Active Frame" to camera name edit box, press**[**EDIT**]**key to enter into edit status, you can input digital number, uppercase and lowercase characters (refer to Chapter 3.4). The camera name can support 32 characters.

Step 3: Press**[**ENTER**]**key to exit edit status.

Move "Active Frame" to "Confirm" button, press**[**ENTER**]**to save the modification and you can see the new camera name. Press "Cancel" button or**[**ESC**]**key to abort.

Camera Name Position

If you do not want to display camera name, just disable the check box beside camera name edit box. The disable flag is "×". If you enable the check box, you can setup the camera name position. You can copy the position to any other camera. The setup steps are:

Step 1: Enter into "Camera" menu.

Step 2: Select one camera.

Step 3: Enable the check box on the right side of camera name, then you move "Active Frame" to "Position" button, press**[**ENTER**]**to enter into camera name position setup interface, as picture below in that interface, you can use**[**↓**][**↑**][**→**][**←**]**keys to move camera name position. When the position is fixed,

press**[**ENTER**]**and return “Camera” menu, and press “Confirm” button to save it. In the “Image Setup” menu, press “Cancel” button or**[**ESC**]**key, you can abort the modification.

OSD is abbreviation of “On Screen Display”. For our embedded DVRDVS, it includes displaying system time and camera name.

OSD settings include: System time, time format, time display position, camera name, camera name display position, etc.

System Time

In “Display” menu, you can setup DVR system date and time.

Move your active frame to “Date/Time setup” item, and press enter.

Date Display Mode: Move the active frame to Date Display Mode then press**[**EDIT**]** then use**[**↑**][**↓**]**key to select OSD format. There are following OSD formats:

MM DD YY

MM DD YY

YY MM DD

YY MM DD Here YY means year, MM means month, DD means day.

You can also enable DST (Daylight-saving Time) function here. Shown as fig 5.10

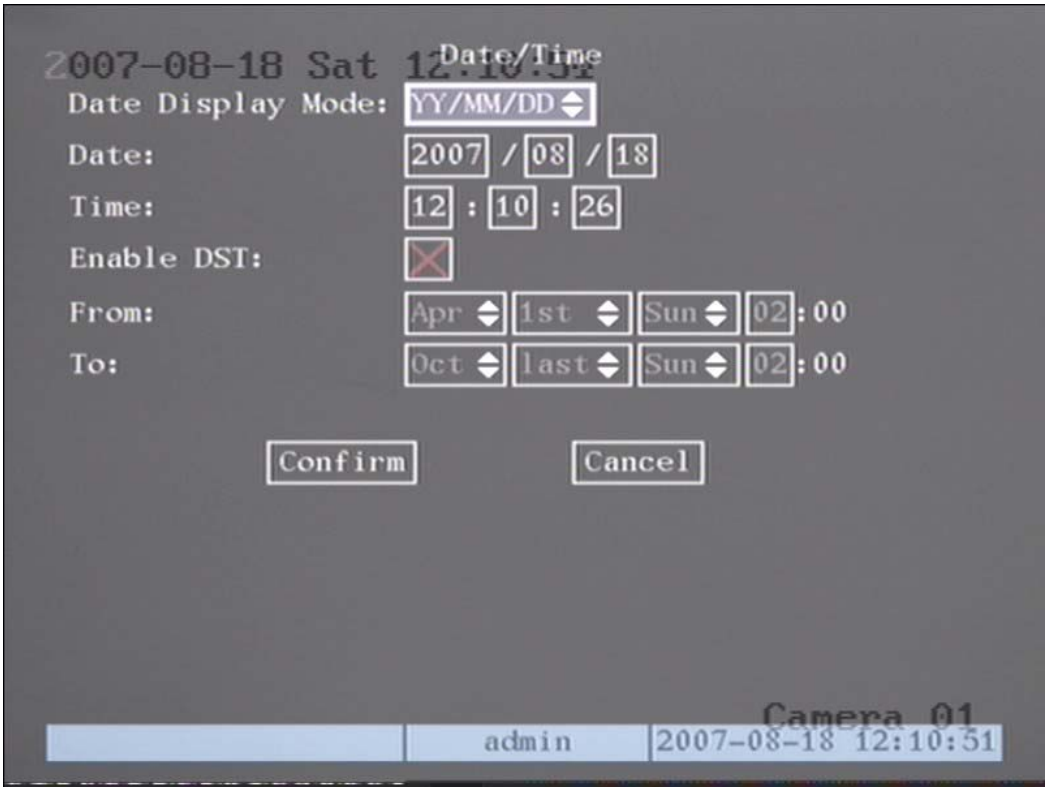

Fig 5.10 Date/time setup

Date OSD Position

In “Camera” menu you can adjust the position where you want Date to display, move active frame to “Position” item on the right side of “Date OSD” item and press enter button. Then you will see the picture below. Use **[↑][↓][←][→]**to adjust the position of date. Shown as picture below.

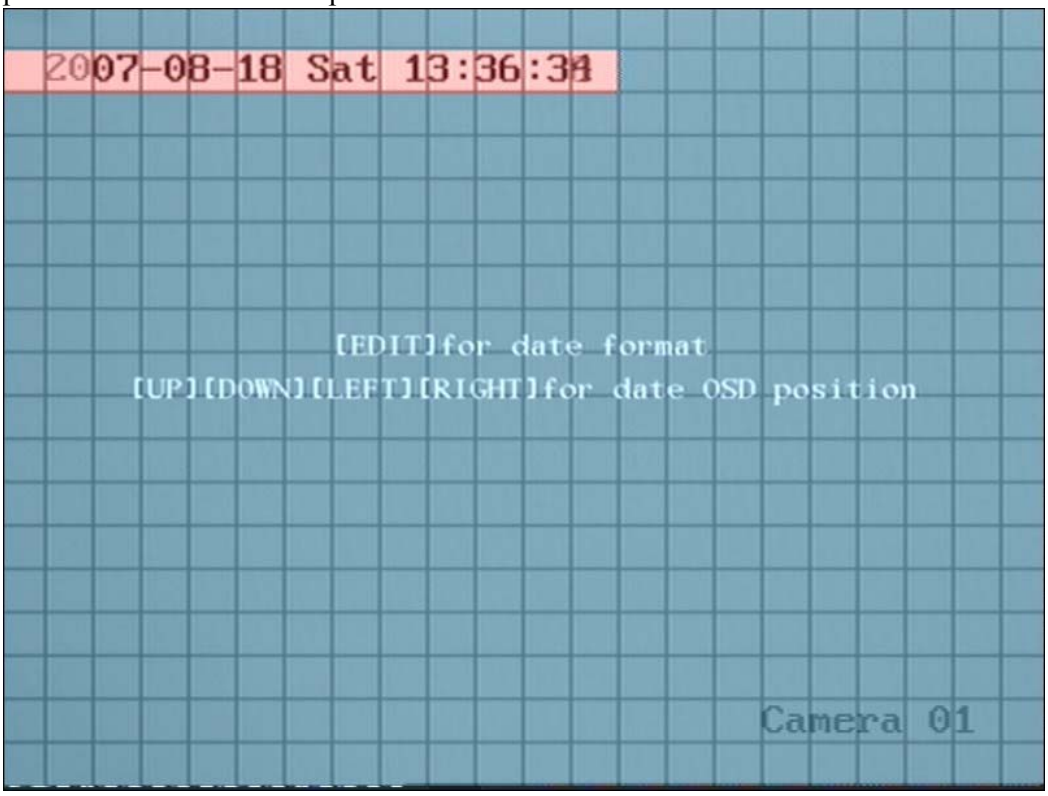

Fig 5.11 Set position of Data & Time

5.6 Video Parameters Setup

For different camera and different background, in order to get the best video image, you need to adjust video parameters such as brightness, saturation, contrast and hue, etc.

You can setup the camera individually, and also you can copy the video parameters of one camera to any other cameras. Here are the setup steps:

Step 1: Enter into “Camera” ,select a camera then enter “Color setup” menu. Shown as fig5.12

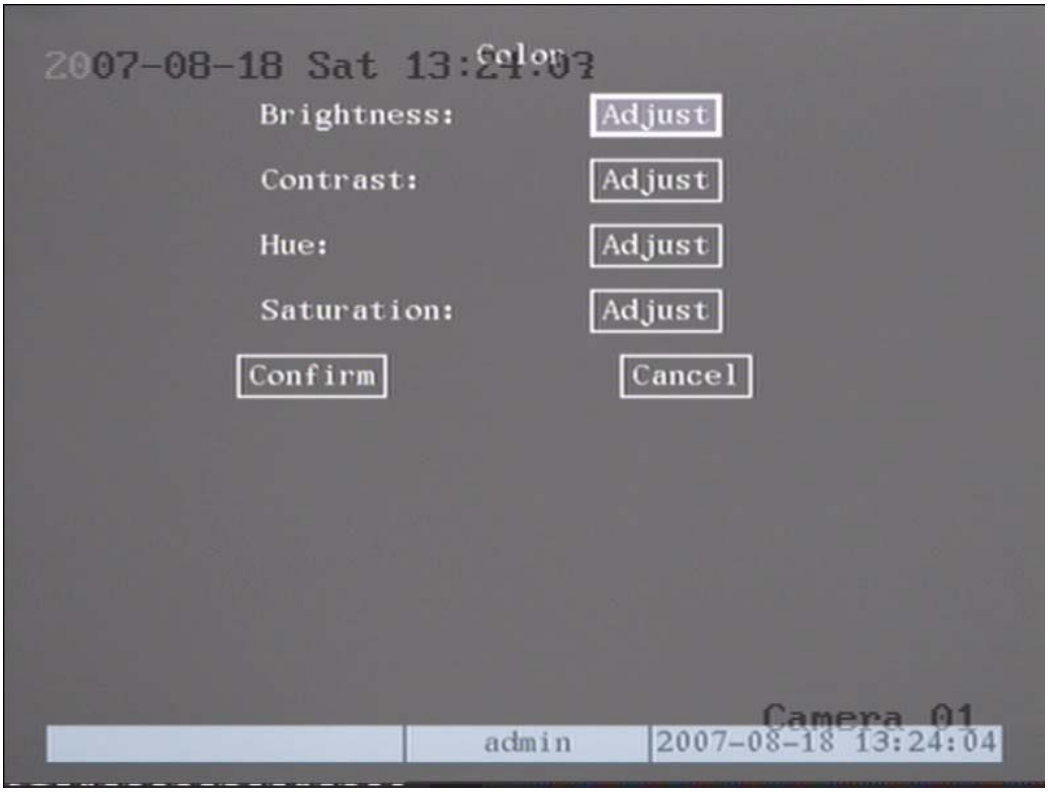

Fig 5.12 Color setup

Step 2: Select camera: Please use**[↑][↓]**keys to select one camera.

Step 3: Adjust brightness, contrast, saturation and hue: Move "Active Frame" to the "Adjust" button on the right side of Brightness, Contrast, Saturation and Hue, press **[**ENTER**]**key, you will enter into the corresponding adjust interface. In the adjust interface, there is one scroll bar at the bottom, you can use**[↑][↓]**keys to adjust and can find the video image will be changed at the same time. When you are satisfied with the real time video image, press**[**ENTER**]**to return "Color" menu.

Step 4: You can copy the video parameters of current camera to any other cameras. Or you can repeat setp2 and step3 to adjust for any other camera.

After adjusting, in "Image Setup" menu, press "Confirm" button to save parameters and make them into effective. Otherwise, press "Cancel" button or**[**ESC**]**key to abort modification.

5.7 Mask Area Setup

In some cases, maybe you want mask the sensitive area. This area will not be

preview and recorded. The mask area setup steps are following:

Step 1: Enter into “Camera” menu:

Step 2: Select one camera: You can use**[↑][↓]**keys to select one camera.

Step 3:Enter into “Advanced settings” enable the check box beside “Privacy Mask” item, you can press**[**Enter**]**or**[**edit**]** key to change the flag into “✓”, and active “Area” button. Move “Active Frame” to “Area” button on the right side of mask check box, press**[**ENTER**]**key to enter into mask area setup interface. Shown as fig 5.13

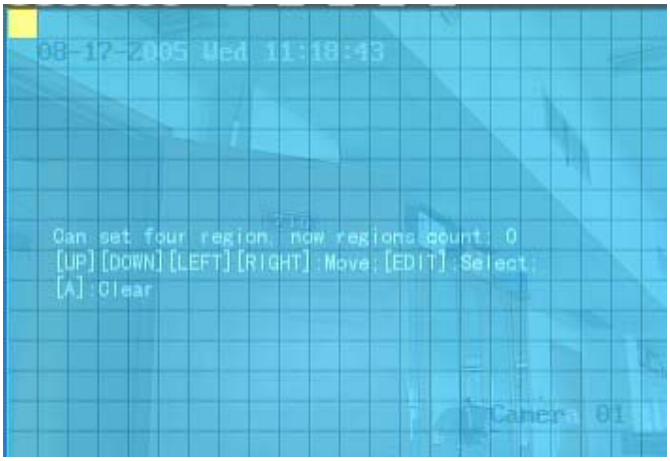

Fig 5.13 Mask area setup

Step 4: Setup mask area: In the mask area setup interface, there is one small yellow pane on the upper left side. For PAL camera, the whole screen is divided into 22*18 panes (22*15 for NTSC), you can use**[↑][↓][→][←]**keys to move the yellow pane to your hope position and press**[**EDIT**]**key, the yellow pane will be turned into red, then you can use**[↑][↓][→]**keys to extend the red pane and **[←]**key to shrink the red pane. This red area is the mask area.

After you make sure the red mask area, press**[**EDIT**]**key to save the mask area. The maximum mask area size is 8*8 panes and the minimum size is only one pane. You can setup 4 mask areas at most.

After you finish setup, press**[**ENTER**]**key to return “Advanced settings” menu. You can press**[**A**]**key to clear all mask areas.

Step 5: Save mask area: You can repeat step2, step3 and step4 to setup mask area for other cameras. In “Advanced setting” menu, press “Confirm” button to save the mask area, press “Cancel” button to abort.

Here is the example for mask area function. Shown as fig 5.14

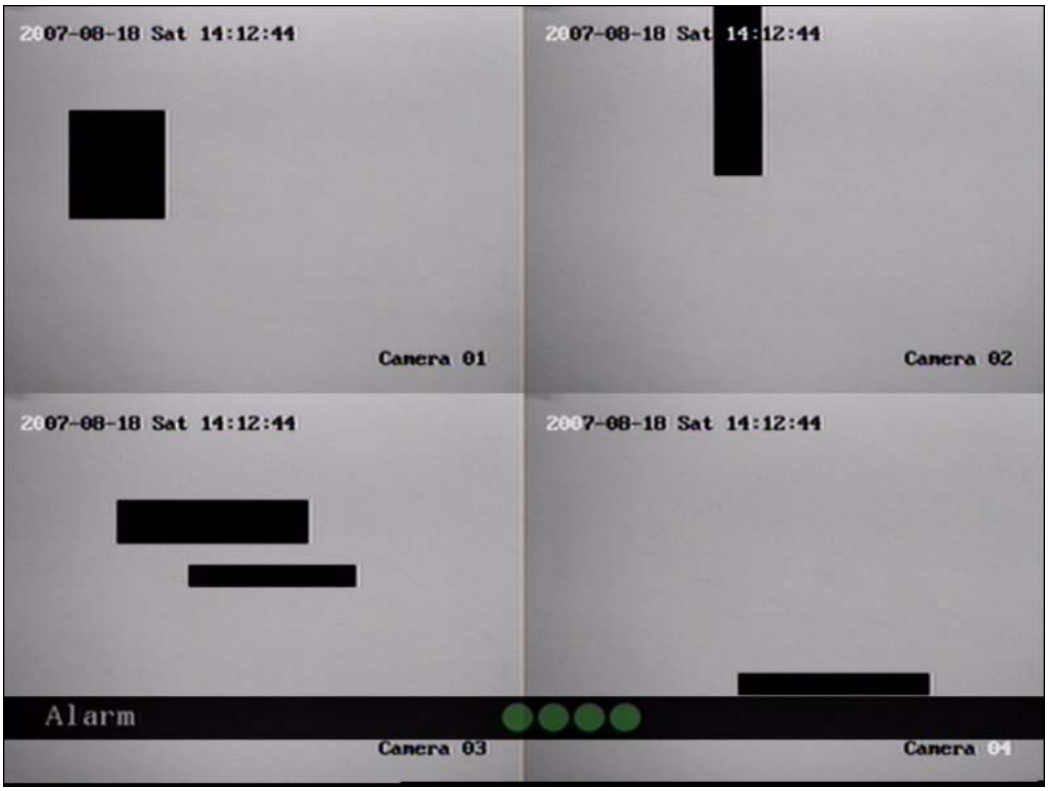

Fig 5.14 Area masked

Disable the mask check box means cancel the mask area.

5.8 View Tampering Alarm

If you enable this function, when someone blocks the camera spitefully, DVR will make warning alarm.

Step 1: Enter into "Camera" menu:

Step 2: Select camera: Please use**[↑][↓]**keys to select one camera.

Step 3: Select sensitivity: move active frame to sensitivity item right beside the "View tampering" item. Press **[**edit**]**key, then you can use**[↑][↓]**keys to select the sensitivity for "View Tampering" item. The sensitivity options are: Low, Normal and High. Select one of them will active "Area Setup" and "Policy" configuration.

Step 4: View tampering area setup Move "Active Frame" to "Area" button, press **[**ENTER**]**key to enter into area setup interface. The setup methods are same as that of mask area setup. After setup the area, press**[**ENTER**]**key to return "Advanced settings" menu. You can press**[**ESC**]**key to abort.

Only one view tampering area can be setup, and the size of the area can be full screen.

Step 5: View tampering alarm setup In "Advanced settings" menu, move "Active Frame" to "Policy" button, press**[**ENTER**]**key to enter into "View Tampering Handle" menu: Shown as fig 5.15

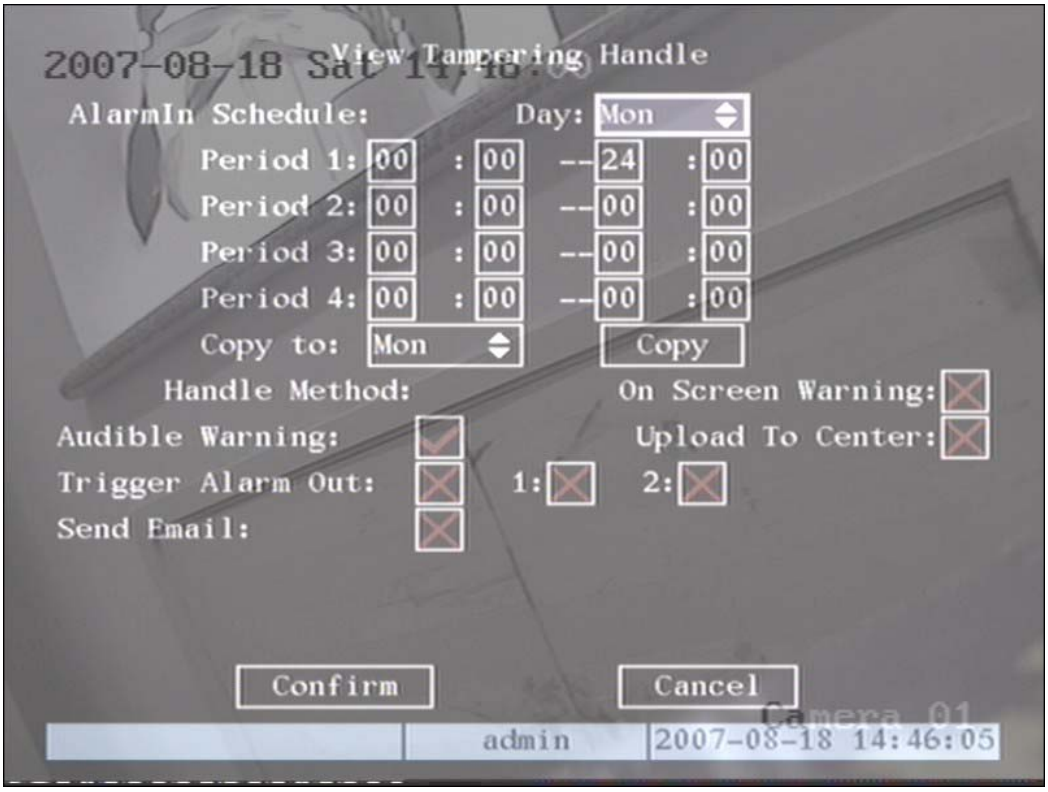

Fig 5.15 View tampering handle setup

Step 6: Alarm schedule setup: When there is view tampering alarm happened, DVR will handle the alarm based on the schedule. You can set 4 periods for each day one week. Also you can copy the schedule of one day to other days.

Notes: Time periods can not be repeated. Please reboot DVR to make the parameters into effective.

Step 7: Setup alarm policy: If there is view tampering alarm happened in schedule, DVR will response based on the policy. You can select one or more solution including "On Screen Warning", "Audible Warning", "Upload to Center" and "Trigger Alarm Output". You can use **[**↑**][**↓**]**and **[**EDIT**]**key to enable or disable them. "×" is disable and "✓" is enable.

Step 8: Save alarm setup: After your setup, press "Confirm" button and return "Image Setup" interface. In "Image Setup" menu, press "Confirm" button to save current camera parameters and return main menu.

Step 9: Save all cameras: If you want to setup other cameras, please repeat from step2 to

step 8. In “Image Setup” menu, press “Confirm” key to save all cameras parameters. Press “Cancel” button or**[**ESC**]**key to abort.

Select “Off” option for “View Tampering”, you can delete the view tampering area.

Note: Only one view tampering area can be setup for each camera. The view tampering area can not be copied. If the schedule is modified, you must reboot the device to make the parameters into effective.

5.9 Video Loss Alarm

When the video cable or camera has something wrong, the video image is lost. If you enable video loss alarm, in such case, DVR will make alarm.

Step 1: Enter into “Camera” menu:

Step 2: Select camera: Use**[↑][↓]**keys to select one camera.

Step 3: Enter into “Advanced settings” interface: Move “Active Frame” to the handle method box on the right side of “Signal Loss” item, use**[↑]**key to select “Handle” option and move “Active Frame” to the “Policy” button on right side. Press**[**ENTER**]**to enter into “Signal Loss” interface: Shown as fig 5.16

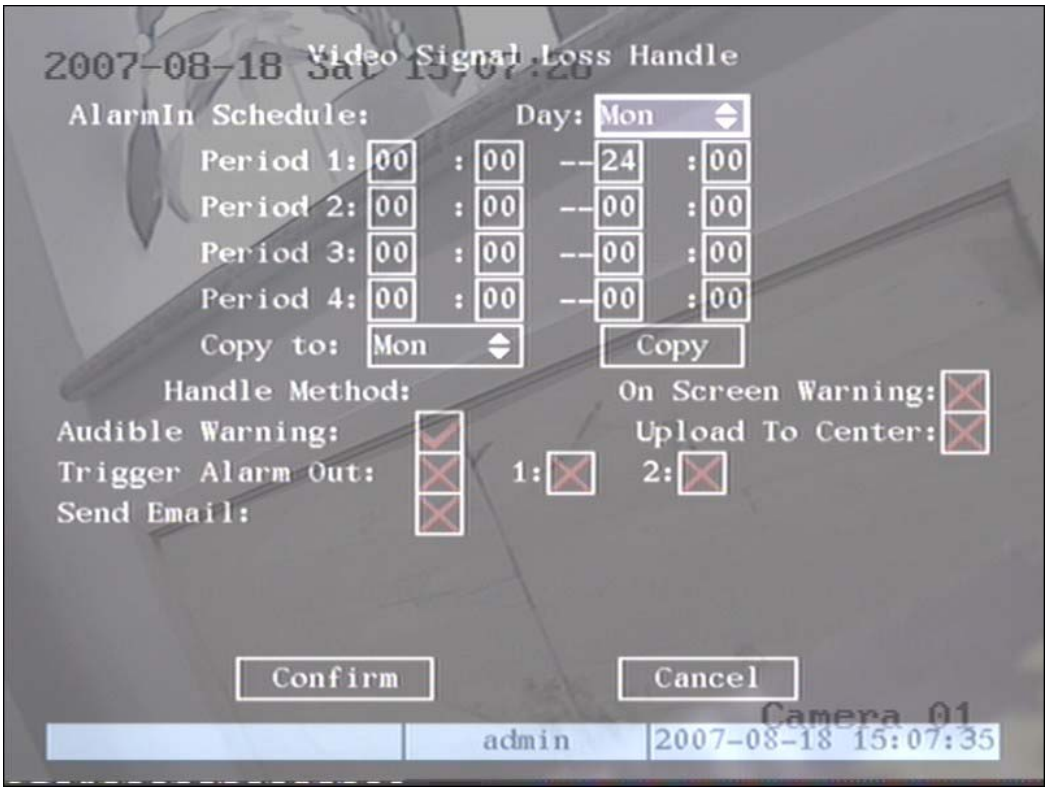

Fig 5.16 Video signal loss handle setup

Step 4: Setup alarm schedule: You can setup working schedule. Only when the video loss is happened in the schedule, DVR will response.

Note: The 4 time periods can not be repeated. Please reboot DVR to make parameters into effective.

Step 5: Setup alarm policy: You can select one or more response solutions, including "On Screen Warning", "Audible Warning", "Upload to Center" and "Trigger Alarm Output". You can use **[**↑**][**↓**]**and **[**EDIT**]**key to enable or disable them. "×" is disable and "✓" is enable.

Step 6: Save alarm setup: After your setup, press "Confirm" button and return "Advanced setting" interface. Press "Confirm" button to save current camera parameters and return main menu.

Step 7: Save all cameras: If you want to setup other cameras, please repeat from step2 to step 6. In "Camera" menu, press "Confirm" key to save all cameras parameters. Press "Cancel" button or**[**ESC**]**key to abort.

5.10 Motion Detection

If you enable this function, when there is motion detected, DVR will make alarm.

Step 1: Enter into "Camera" menu:

Step 2: Select camera: Use**[**↑**][**↓**]**key to select one camera after pressing **[**edit**]**key.

Step 3: Select motion detection sensitivity: On the right side of "Motion Det. Level" item, there is a list box. That is motion detection sensitivity. There are 7 options, from 0 (the lowest) to 5 (the highest) and "Off". You can use**[**↑**][**↓**]**keys to select one. If you select "Off" option, DVR will not response even if there is motion detection. If you select other options, it will active "Motion Area Setup" button and "Policy Setup" button. If you select low sensitivity such as 0, DVR will response only when there is great motion detected. On the other side, for high sensitivity such as 5, DVR will response with small motion detection.

Step 4: Motion area setup: You must define motion areas so that DVR will response when there is motion in those areas. Move "Active Frame" to "Area" button on the right side of sensitivity list box, press**[**ENTER**]**key, you can enter into "Motion Area Setup" interface. Shown as fig 5.17.

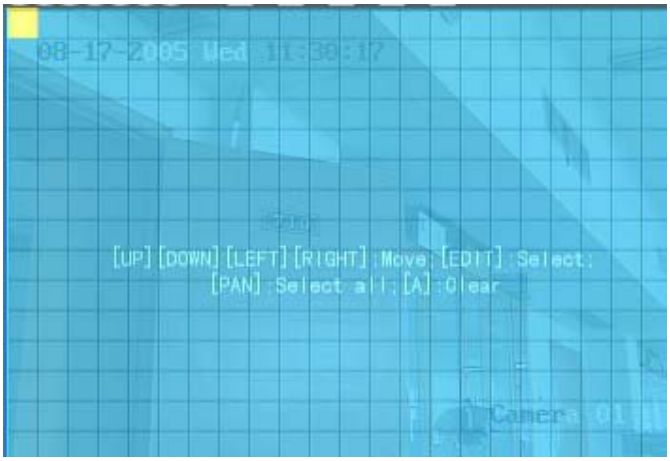

Fig 5.17 Motion area setup

The whole screen is divided into 22*18 panes (NTSC: 22*15). There is one yellow panel on the upper left side. The motion area setup steps are the same as that of mask area setup (refer to chapter 5.7). The only differences are that you can use**[**PTZ**]**key to set the whole screen as motion area, and multi motion areas can be defined. Press**[**A**]**key to clear all motion areas.

Setup multi areas: After you setup one motion area, press**[**EDIT**]**key, the yellow pane will appear again, then you can setup another motion area.

Clear motion area:

Clear part of motion area: Move the yellow pane to the start clear position of motion area, press**[**EDIT**]**, you will find the yellow pane is turned into black pane. You can use**[**↓**][**→**]**key to enlarge or shrink the blue area. Press**[**EDIT**]**key to clear this part motion area.

Press**[**Enter**]**key to save and return "Image" menu. Press**[**ESC**]**to cancel.

Clear all motion areas: Press**[**A**]**key to clear all motion areas of this channel.

The keys used to setup motion areas are following:

13) **[**↑**][**↓**][**←**][**→**]**: Move yellow panel to any position;
14) **[**EDIT**]**:Yellow panel and red panel switch key:;
15) **[**→**]**: Right enlarge red pane;
16) **[**←**]**: Left shrink red pane;
17) **[**↓**]**: Down enlarge red pane;
18) **[**↑**]**: Up shrink red pane;
19) **[**PTZ**]**: Set whole screen as motion area;
20) **[**A**]**: Clear all motion areas;
21) **[**ENTER**]**: Save and return "Image Setup" menu;
22) **[**ESC**]**: Cancel setup and return "Image Setup" menu;

Step 5: Motion alarm policy: Move "Active Frame" to the corresponding "Policy" button of motion detection alarm, press**[**ENTER**]**key to enter into "Motion Alarm Handle" menu: Shown as fig 5.18

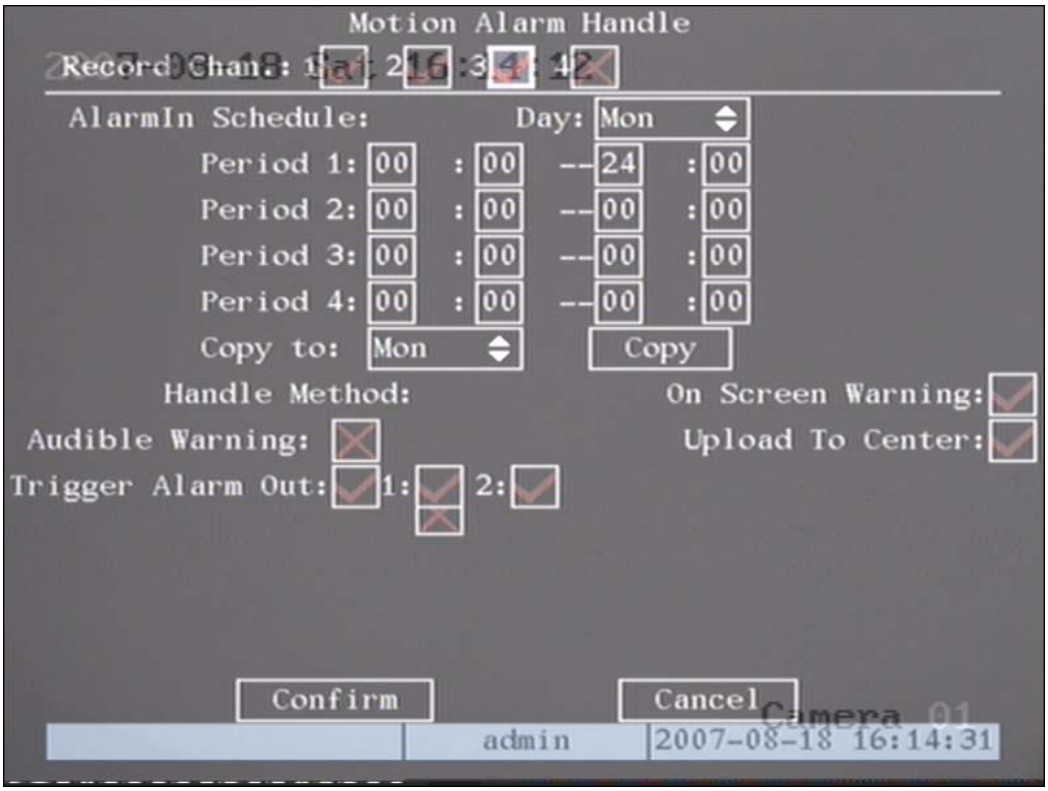

Fig 5.18 Motion alarm handle setup

Step 6: Motion alarm record channel setup: When there is motion alarm happened, you can trigger related camera to start to record. In "Motion Alarm Handle" menu, you can select one or more record channels. Please use**[**ENTER**]**or**[**EDIT**]**key to enable the flag into "✓".

Note: In order to make the cameras start recording, in "Recording" menu, you must enable recording schedule and set "Rec Type" as "Motion Detection" or "Motion | Alarm". Please refer to chapter 5.12 for recording setup.

Step 7: Motion alarm schedule: When the motion alarm is happened in schedule, DVR will response such as "On Screen Warning", "Audible Warning", "Upload to Center" and "Trigger Alarm Output". You can setup 4 time periods for one day and 7 days for one week.

Note: Time periods in one day can not be repeated.

Step 8: Motion alarm handle method setup: You can select one or more handle methods such as "On Screen Warning", "Audible Warning", "Upload to Center" and "Trigger Alarm Output".

Description: If "On Screen Warning" is enabled, when there is motion alarm happened and DVR is in preview mode, DVR will switch to the related camera. If you trigger more than one

camera, DVR will pop-up them one by one every 10 seconds. When the motion alarm is disappeared, DVR will restore preview mode.

Step 9: Save motion alarm setup: Press "Confirm" button to return "Image Setup" menu. In the "Image Setup" menu, press "Confirm" button to save the current camera parameters.

Step 10: Save all cameras: You can repeat from step2 to step8 to setup motion detection parameters for other cameras. Also you can copy the parameters of one camera to any other cameras.

Note: Motion alarm area can not be copied.

If you want to disable motion alarm area and motion alarm policy, you just need to select the motion alarm sensitivity as "Off".

5.11 Preview Properties

In "Preview" menu, you can setup preview mode, screen switch time, enable or disable audio preview and preview layout.

Step 1: Enter into "Preview" menu: In the main menu, move "Active Frame" to "Preview" icon and press**[**ENTER**]**, you can enter into "preview" menu. Shown as fig 5.19

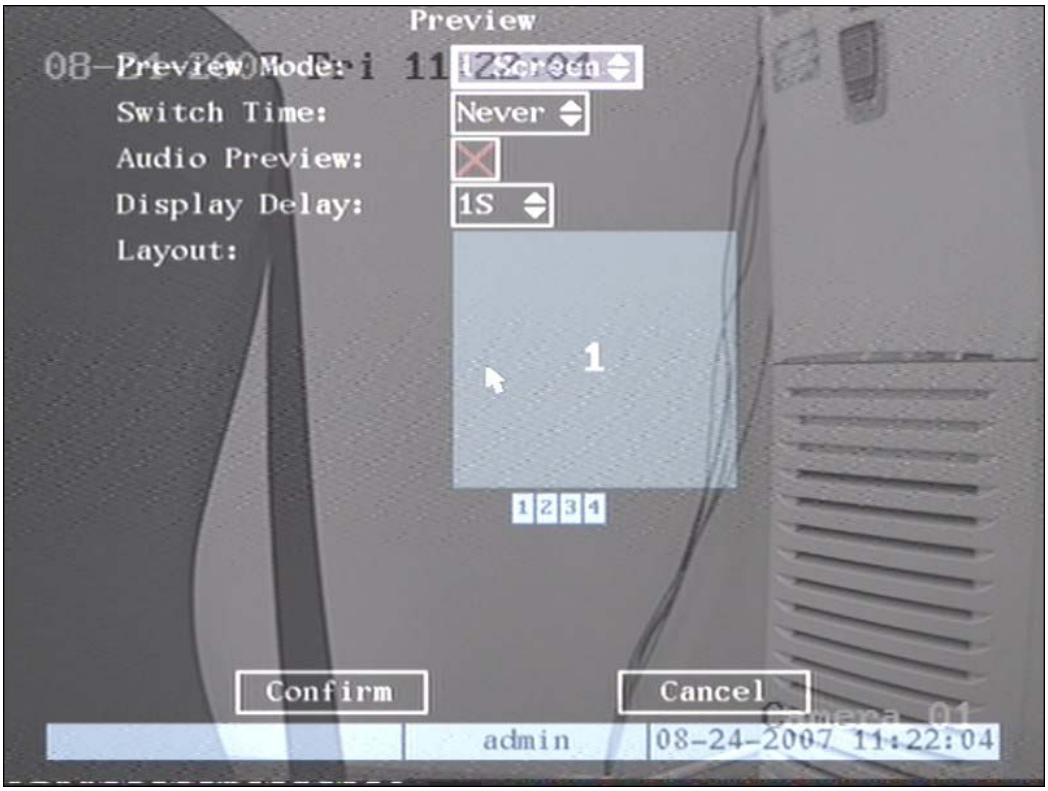

Fig 5.19 Setup preview mode

Step 2: Preview properties:

Preview mode: For preview mode item, you can use**[↑][↓]**key to select one mode. If DVR has only 1 channel, you can select only "1 Screen" option. If DVR has 4 channels, there are "1 Screen" and "4 Screen" options. If DVR has more than 4 but less than 9 channels, there are "1 Screen", "4 Screen" and "9 Screen" options. If DVR has 16 channels, there are "1 Screen", "4 Screen", "9 Screen", "12 Screen" and "16 Screen" options.

Switch time: That is image preview switch time. You can use**[↑][↓]**keys to select switch time. There are many options, including "5 Seconds", "10 Seconds", "20 Seconds", "30 Seconds", "1 Minutes", "2 Minutes", "5 Minutes" and "Never". If you select "Never", the preview image will not be switched automatically. For example, for 16 channels DVR, if you select "4 Screen" preview mode and "20 Seconds" switch time, DVR will cycle display 4 channels image every 20 seconds.

Audio preview: If you enable audio preview ("✓"), when you preview single camera, DVR will play the audio of that channel.

Preview layout setup: There is a square frame divided into many windows. If you select "4 Screen" preview mode, this frame is divided into 4 windows. Each window represents one camera. You can move "Active Frame" among the windows. There is one bar under the square to display the preview order of all cameras.

First select the biggest screen preview mode, for example, for 4-channel DVR, select "4

Screen" preview mode so that all windows are display in the square.

Secondly, move "Active Frame" to one of these windows, press numeric keys to input camera index. The small window will display that camera number. In this way you can change the display order. If you press 0, then the corresponding window will not display live video.

After you define the camera preview order, you can select preview mode to meet your demand.

Save setup: Press "Confirm" button to save preview properties. Press "Cancel" or **[**ESC**]**key to abort.

5.12 Recording Setup

In main menu, there is an icon named "Recording". You can enter into recording menu as following:

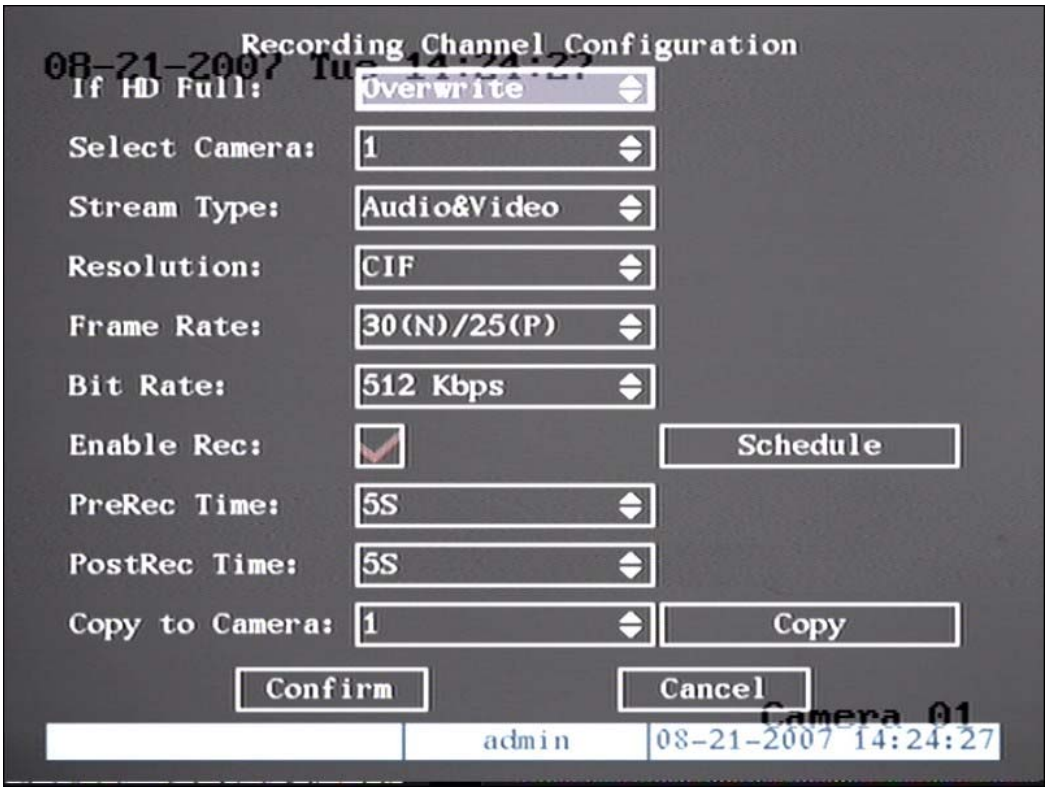

Fig 5.20 Recording channel configuration

"Recording" menu description:

If HDD Full: There are two options: "Overwrite" and "Stop recording". If you select "Overwrite" option, when all HDDs in DVR are full, DVR will overwrite the earliest recorded files and continue recording. If you select "Stop recording" option, when all HDDs are all full, DVR will handle it as "Hard Disk Full" exception, please refer to chapter 5.17 for exception menu.

Select Camera: Here all channels are listed. You can use**[↑][↓]**keys to select one.

Stream Type: There are two options, one is "Audio&Video" stream and the other is "Video" stream only. If you want to record video and audio, please select "Audio&Video" option, otherwise you can select "Video" option to record only video. For DS-8000HSI DVR, there is only one "Video" option.

Note: If you change this option, please reboot DVR to make parameter into effective.

Resolution: The higher resolution is, the clearer the image is. The resolution options from low to high are: QCIF, CIF

Note: If you change this resolution option, please reboot DVR to make it into effective.

Bit Rate Type:

DVR will use the fixed bit rate to compress image. The bit rate size is defined in "Bit Rate" option. In this case, we can calculate the recorded file size and network bandwidth that we need.

The max bit rate selection has relations to resolution. If you select high resolution, you must select high bit rate. For CIF resolution, the typical max bit rate is 384K-768Kbps. For DCIF resolution, the typical bit rate is 512K-1Mbps. For 4CIF resolution, the typical bit rate is 1Mbps-1.5Mbps. Of course, you will select the proper max bit rate based on the camera, background and image quality requirement.

Bit rate: You can select bit rate size for fixed bit rate type. It is the same as "Max Bit Rate".

Frame Rate: Frame per second. Options are: 25 (PAL)/30(NTSC) 20, 16, 12, 10, 8, 6, 4, 2, 1 For low frame rate, you can select low bit rate size.

PreRecord Time: When you enable motion detection recording or external alarm recording, you can define prerecord time. The options are: No PreRecord, 5 Seconds (default selection), 10 Seconds, 15 Seconds, 20 Seconds, 25 Seconds, 30 Seconds and Max PreRecord.

MaxPreRecord is to save all data in PreRecord buffer. The PreRecord time is related with bit rate. The lower bit rate, the longer PreRecord time is.

If the bit rate (Max bit rate) is very low, and you select "PreRecord Time" as "5 Seconds", maybe the actual perrecord time is more than 5 seconds. On the other side, if the bit rate is high, and set "PreRecord Time" as "30 Seconds", the actual prerecord time maybe is less than 30 seconds.

PostRecord Time: When external alarm or motion alarm is stopped, DVR will continue recording time. The options are: 5 Seconds (default), 10 Seconds, 30 Seconds, 1 Minute, 2 Minutes, 5 Minutes and 10 Minutes.

Enable Rec: Enable or disable selected camera record function. "×" means disable and "✓" means enable.

Schedule: When you enable recording function, you can setup recording schedule.

Note: When the camera's recording schedule is modified, you must reboot DVR to make it into effective.

All day recording setup:

Step 1: Enter into recording schedule menu

In recording menu, use**[**ENTER**]**or**[**EDIT**]**key to enable record function ("✓" flag), press "Schedule" button to enter into recording schedule menu.

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5.21 Recording schedule setup

Step 2: Select one day and enable all day recording option

For "Day" item, there are options: Monday, Tuesday, Wednesday, Thursday, Friday, Saturday and Sunday. Use**[**↑**][**↓**]**keys to select one day. Move "Active Frame" to the check box on the right side of "All Day" item, press**[**ENTER**]**or**[**EDIT**]**key to enable "All Day" option. "×" means disable and "✓" means enable.

Step 3: Record type

For "Rec Type" item, the options are: All Time, Motion Detect, Alarm, Motion|Alarm, and Motion&Alarm, command.

For all day record mode, only one record type can be selected.

Step 4: Copy to other days

You can repeat step2 and step3 to setup for other days. Also you can copy the current day to other days.

Step 5: Save

Press "Confirm" back to "Recording" menu. Press "Confirm" again to save the parameters and return main menu.

Part time recording setup

Step 1: Enter into recording schedule menu

In recording menu, use**[**ENTER**]**or**[**EDIT**]**key to enable record function ("✓" flag), press "Schedule" button to enter into recording schedule menu.

Step 2: Select one day and disable all day recording option

For "Day" item, there are options: Monday, Tuesday, Wednesday, Thursday, Friday, Saturday and Sunday. Use**[**↑**][**↓**]**keys to select one day. Move "Active Frame" to the check box on the right side of "All Day" item, press**[**ENTER**]**or**[**EDIT**]**key to disable "All Day" option. "×" means disable and "✓" means enable.

Step 3: Setup time period and record type

There are 4 time periods for one day, and each time period can select different record type. Input start time and stop time for each time period, and select record type for each period. The record type options are: All Time, Motion Detect, Alarm, Motion&Alarm and Motion|Alarm,

command.

Note: The time periods in one day can not be repeat.

Step 4: Copy to other days

You can repeat step2 and step3 to setup for other days. Also you can copy the current day to other days.

Step 5: Save

Press "Confirm" back to "Recording" menu. Press "Confirm" again to save the parameters and return main menu.

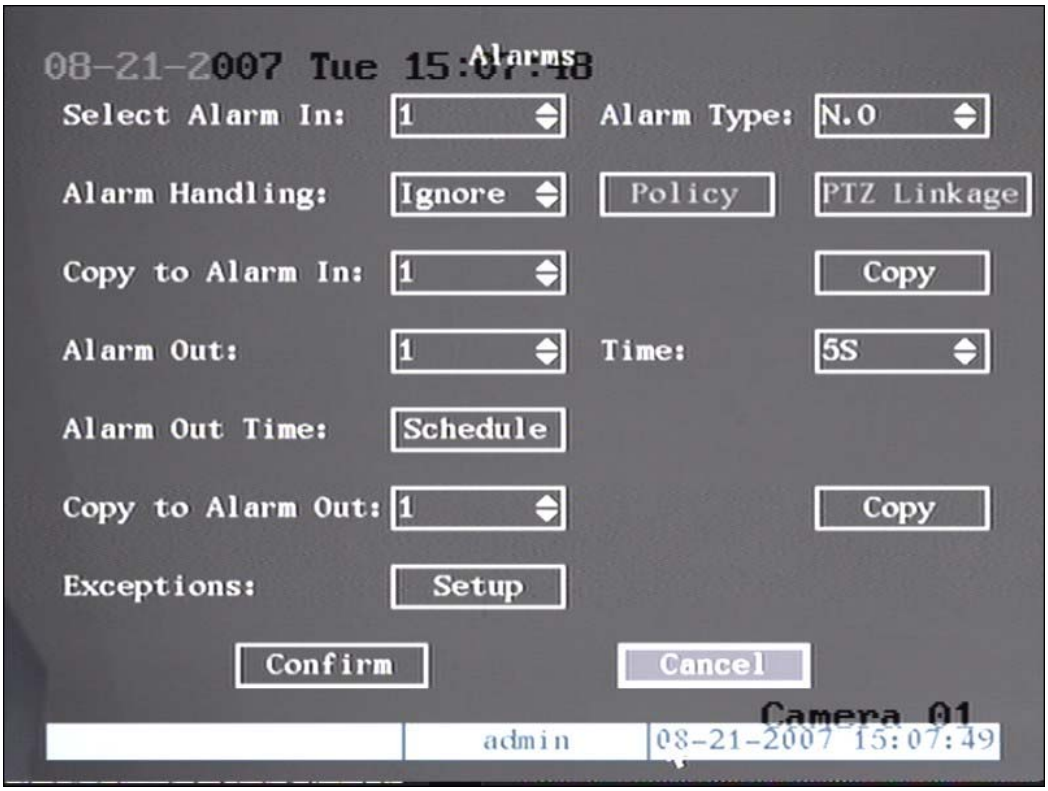
Note:

1) **If record type is "Motion Detect" or other related types, you must setup "Motion Detection" in order to trigger motion recording (refer to chapter 5.10).**
2) **If record type is "Alarm" or other related types, you must setup "Alarms" in order to trigger alarm recording (refer to chapter 5.13).**
3) **The time period is among 00:00—24:00.**

5.13 External Alarm Input and Relay Output

For DS-7108 , there are 16 alarm in and 4 relay out. In "Alarms" menu, you can setup for each external alarm input.

In main menu, move "Active Frame" to "Alarms" icon and press**[**ENTER**]**key to enter into alarms menu: Shown as fig 5.22



5.22 Alarms setup

External alarm input setup:

Step 1: Select one alarm input Use**[↑][↓]**keys to select one alarm input.

Step 2: Alarm type

This is sensor type. You can select "Normal Open" or "Normal Close" according to the sensor type.

Step 3: Enter into "Alarm in Handling" sub menu

In the "Alarms" menu, there are two options for "Alarm Handling" item. One is "Ignore", and the other is "Handle". If you select "Handle" option, you can active "Policy" and "PTZ Linkage" buttons on right side. Move "Active Frame" to "Policy" button and press**[**ENTER**]**key, you will enter into "Alarm in Handling" sub menu: Shown as fig 5.23

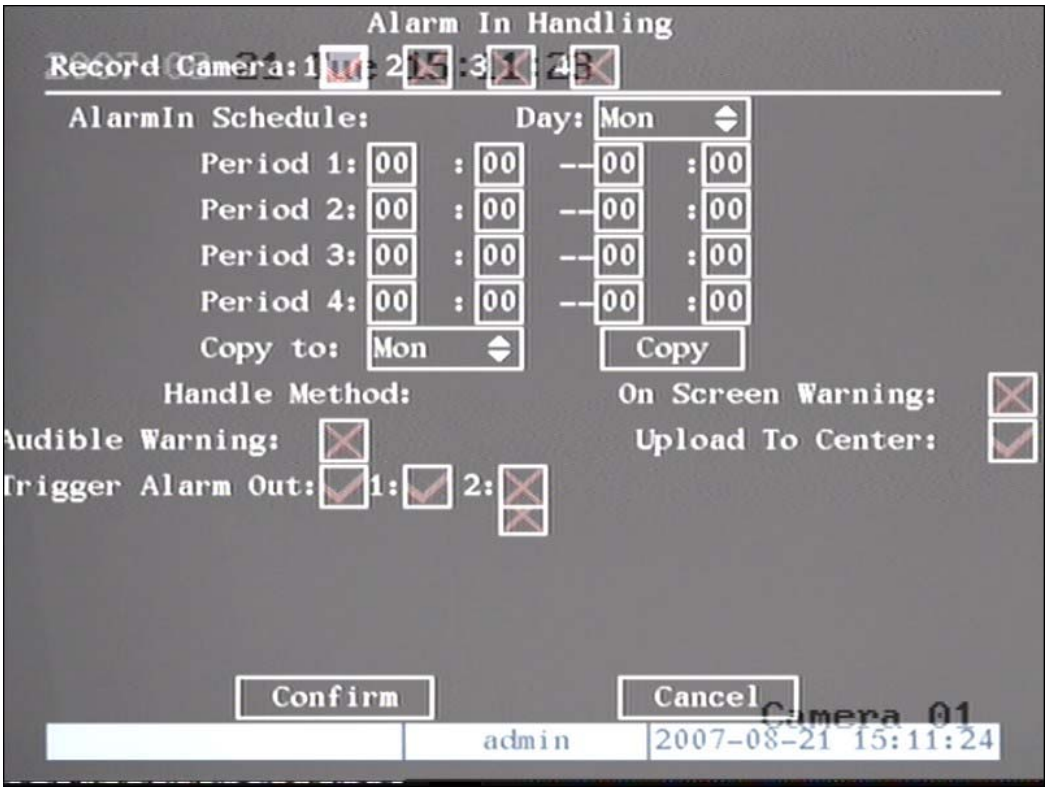


Fig 5.23 Alarm in handling setup

Step 4: Alarm trigger record channel setup

You can select channels to record for each alarm input. In the sub menu, you can use**[**ENTER**]**or**[**EDIT**]**key to enable record channel. "×" means disable and "✓ means enable.

Note: In order to trigger the channel to record, in "Recording" menu, you must enable recording and select record type as "Alarm" or other related type. Please refer to chapter 5.12.

Step 5: Schedule for alarm handle method

When there is external alarm happened in the schedule, DVR will response according to the handle methods.

Step 6: Alarm handle method

You can select one or more handle method: "On Screen Warning", "Audible Warning", "Upload to Center" and "Trigger Alarm Output".

Description: If "On Screen Warning" is enabled, when there is external alarm happened and DVR is in preview mode, DVR will pop-up the related camera. If you trigger more than one camera, DVR will pop-up them one by one every 10 seconds. When the external alarm is disappeared, DVR will restore preview mode.

Step 7: Save setup

In “Alarm in Handling” sub menu, press “Confirm” button and return “Alarms” menu. In “Alarms” menu, press “Confirm” button to save the parameters.

Step 8: PTZ Linkage

Move “Active Frame” to “PTZ Linkage” button, press**[**ENTER**]**key to enter into “PTZ Linkage” setup menu: Shown as fig 5.24

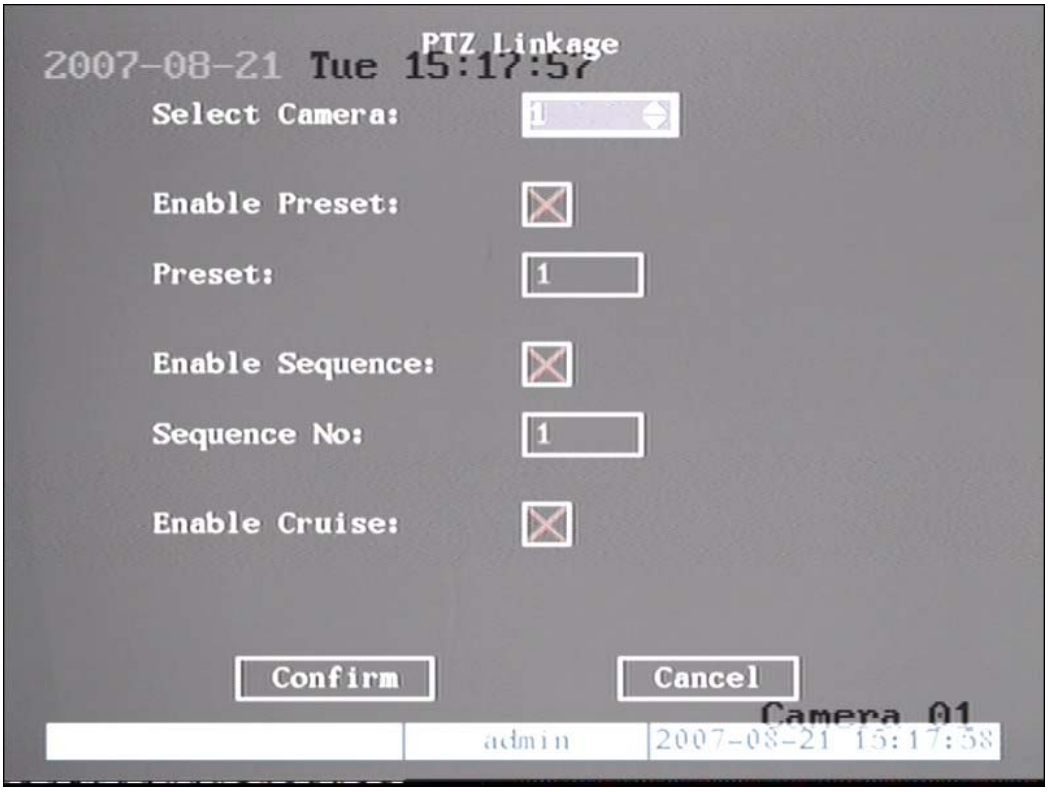


Fig 5.24 PTZ linkage setup

First select one camera, then select one of following PTZ linkage:

23) Preset: Set the flag as “✓” to enable preset, in the preset number edit box and input one preset number that has been setup already. Please refer to chapter 5.15 for preset setup.

24) Sequence: Set the flag as “✓” to enable sequence and input one sequence number that has been setup already. Please refer to chapter 5.15 for sequence setup.

25) Cruise: Set the flag as “✓” to enable cruise. Please refer to chapter 5.15 for cruise setup.

Press “Confirm” button to save and return “Alarms” menu. Press “Cancel” button or**[**ESC**]**key to abort and return “Alarms” menu.

Note: Please make sure that the PTZ you are using can support preset, sequence and cruise functions. One external alarm input can trigger many cameras PTZ linkage.

Step 9: Copy the parameters to other external alarm input You can copy the parameters of current alarm input to other external input.

Step 10: Save setup In "Alarms" menu, press "Confirm" button to save the parameters. Press "Cancel" button or**[**ESC**]**key to abort.

Alarm relay output setup

Step 1: In "Alarms" menu, use**[**↑**][**↓**]**keys to select one alarm output.

Step 2: Select delay time

The delay time is when the alarm is disappeared, the alarm output will continue output time. The delay time options are: 5 Seconds, 10 Seconds, 30 Seconds, 1 Minute, 2 Minutes, 5 Minutes, 10 Minutes and Manual Stop. If you select "Manual' option, the alarm output will not stop until you press "Clear Alarm" button in "Utilities" menu. So the actual alarm output time is made up of alarm input time and this delay time.

Step 3: Enter into alarm out schedule

You can set the schedule to make alarm output into effective. Move "Active Frame" to "Schedule" button on right side of "Alarm Out Time" item, press**[**ENTER**]**key to enter into the corresponding schedule menu: Shown as fig 5.25

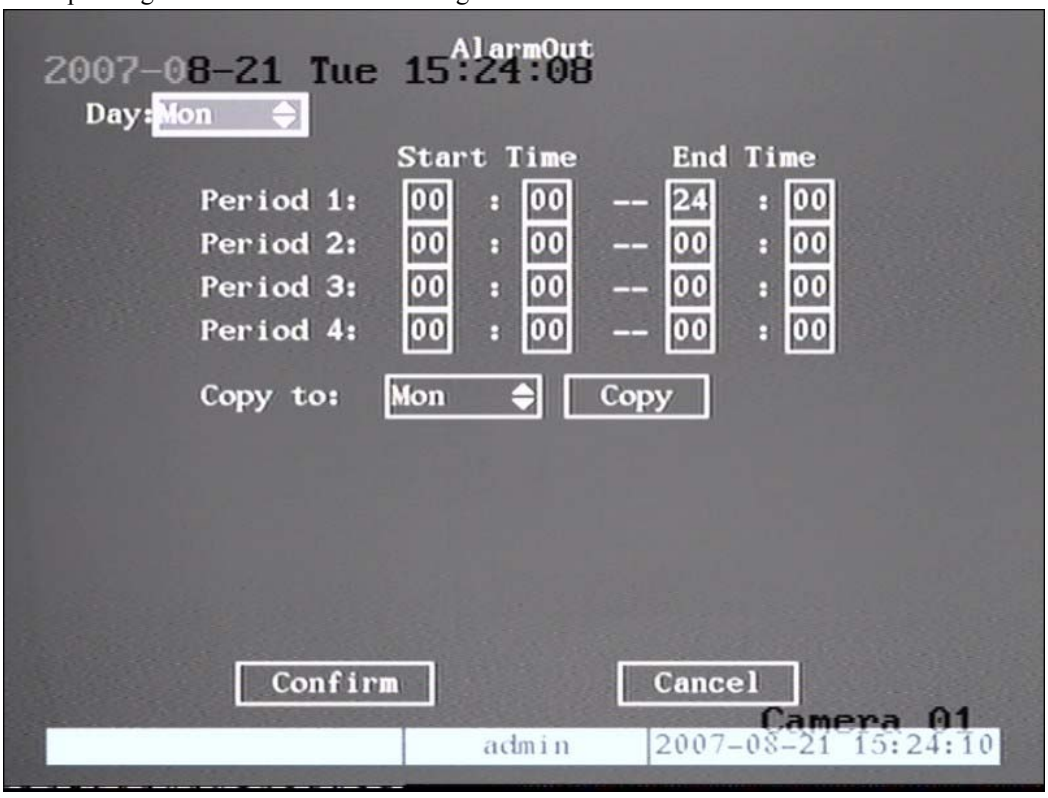


Fig 5.25 Alarm out schedule

Step 4: Setup alarm out schedule

Like other schedule setup, you can set 4 time periods for one day and 7 days for one week.

When you finish setup, press “Confirm” button to return “Alarms” menu.

Step 5: Copy one alarm output parameters to other alarm output

In “Alarms” menu, you can copy parameters of current alarm output to other alarm output.

Step 6: Save setup

When you finish setup, in “Alarms” menu, press “Confirm” button to save all parameters.

Note: If any schedule is modified, you must reboot DVR to make it into effective.

Exceptions

The exceptions can be handled at present include: hard disk full, hard disk error, illegal access, IP address conflict, network failure, and NTSC/PAL differ.

Enter into “Exceptions” menu: Shown as fig 5.26

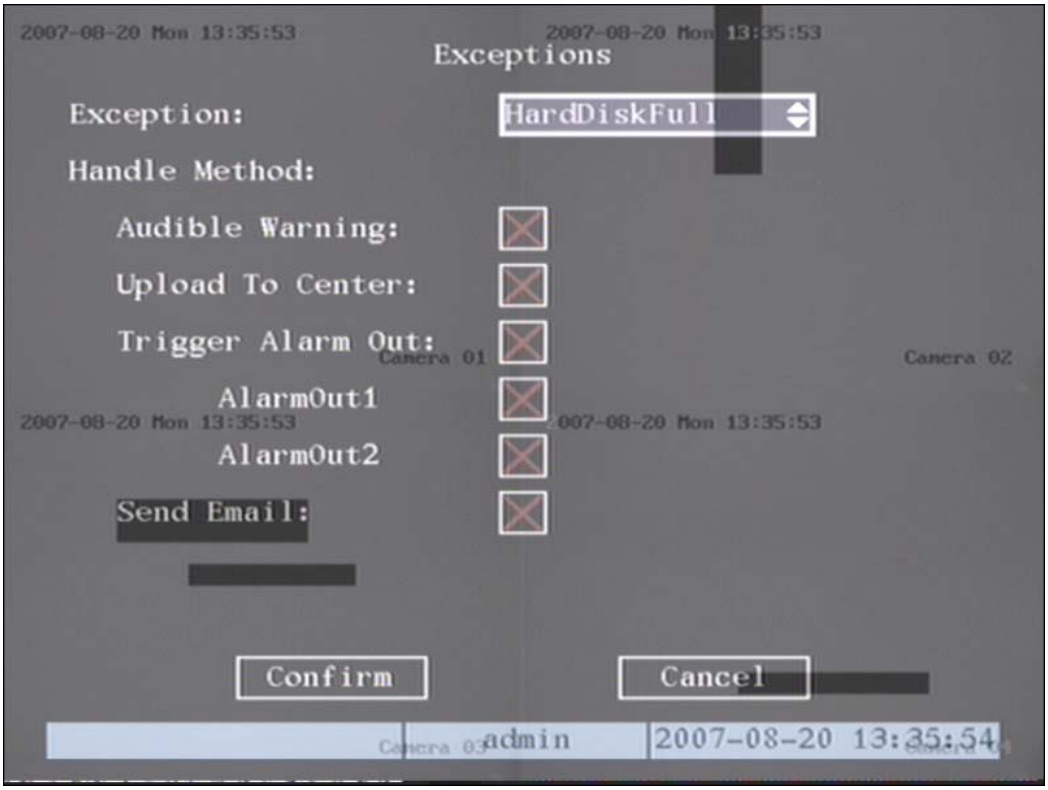


Fig 5.26 Exceptions setup

Including the following handle methods:

Audible Warning: DVR beep warning.

Upload to Center: Send exception information to center host PC.

Trigger Alarm Output: trigger local relay output.

You can select more than one handle methods.

After you finish setup, press “Confirm” button to save parameters. Press “Cancel” button

or**[**ESC**]**key to abort.

5.14 Network Parameters

If you want use network to access DVR, you must setup network parameters.

Note: If any network parameter is modified, you must save and reboot DVR to make it into effective.

In main menu, move “Active Frame” to “Network” icon and press**[**ENTER**]**, you can enter into “Network” menu as following: Shown as fig 5.27

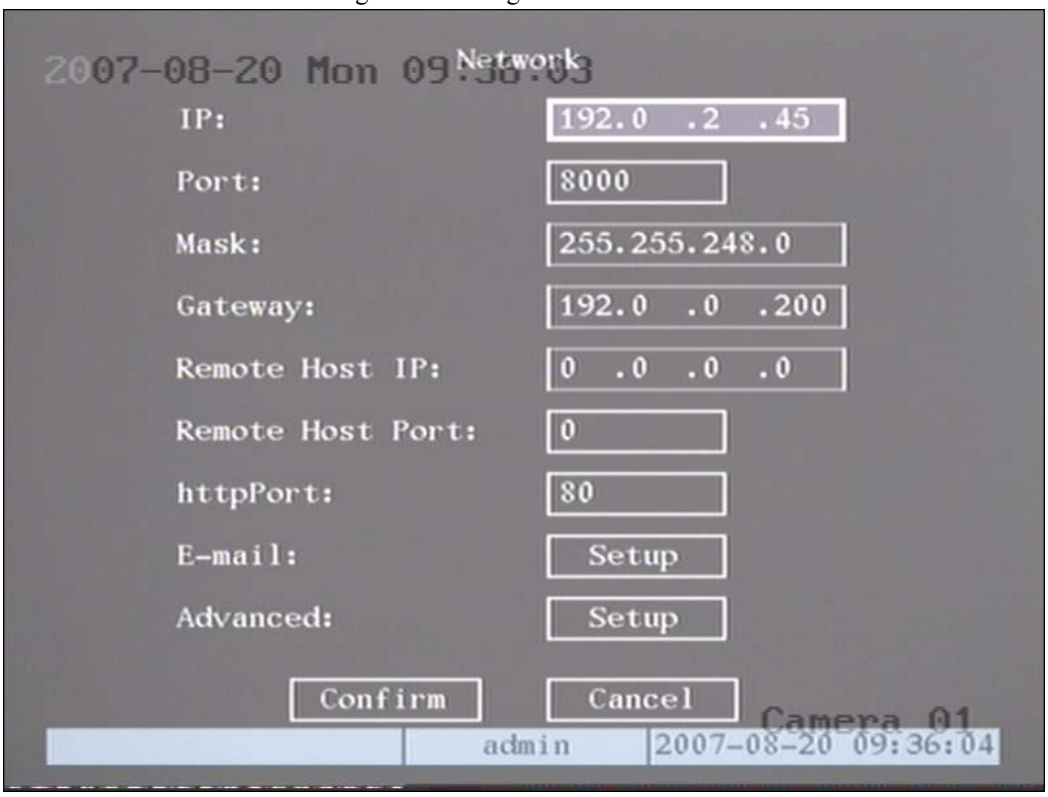


Fig 5.27 network setup

“Network” menu description:

IP address: This IP address must not be conflict with other IP. If there is DHCP server in network, you can set the IP as “0.0.0.0”, save and reboot DVR. In reboot process, DVR will search the DHCP server and get one dynamic IP address. This item will display the dynamic IP address. If DVR uses PPPoE function, also DVR can dialup into internet and this item will display the dynamic internet IP address.

Port: Network access port number, must be greater than 2000.

Mask: This is sub net mask.

Gateway: The gateway IP is used to communicate in different network segments

Remote Host IP and Port: If you set this IP and port, when there is alarm and exception happened, DVR will send information to that host IP. The center with this IP can receive alarm and exception information from DVR. You can use SDK to develop this center software.

HttpPort: The port is for IE browser. The default value is 80. It can be modified.

Advanced setup: Move "Active frame" to "Advanced" then press "enter" to enter into the configure interface. Shown as fig 5.28

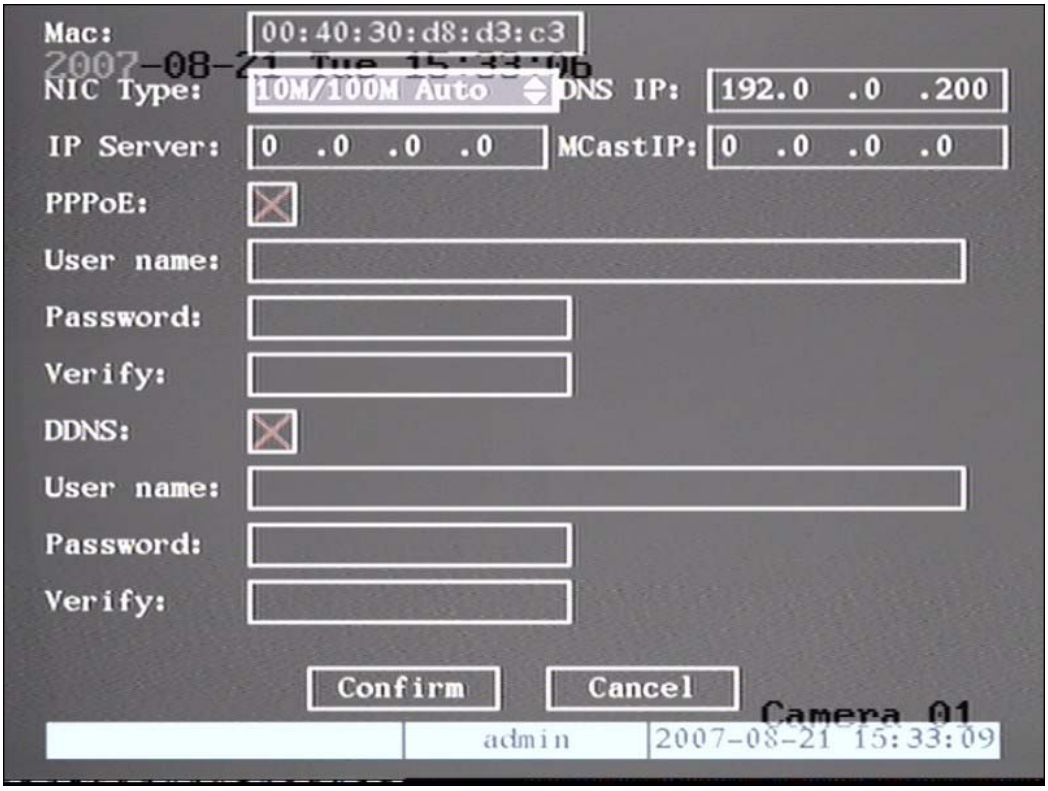


Fig 5.28 Advanced network setup

Advanced setup description :

NIC type: Defautl is "10M/100M Auto", the other options are: 10M Half-Dup, 10M Full-Dup, 100M Half-Dup and 100M Full-Dup.

IP server address: If DVR uses PPPoE function, and get one dynamic IP address. If you set DNS IP with one fixed Internet IP, DVR will send some information such as DVR name, DVR serial number, DVR current IP to that fixed IP address. We -call that fixed Internet IP as DNS IP.

The DNS server with that fixed Internet IP can receive DVR information and used to resolve DVR dynamic IP.

This IP server is special software, not the normal domain name server. You can use the provided SDK to develop this DNS software.

DNS IP : Get your DNS IP from your ISP . Fill in this item in order to get access to a remote server with a domain name.

Multicast IP: It is one D-class IP address, among 224.0.0.0 --- 239.255.255.255. If you do not use multicast function, you do not need to set. Some routers will prohibit multicast function in case of network storm.

PPPoE: DVR support PPPoE dail-up function.

Example: Use PPPoE function

Step 1: Enter into "Network" menu.

Step 2: Select NIC type.

Step 3: Input port number. In the port edit box, use numeric keys to input port number. The port number must be more than 2000.

Step 4: Input IP Server: Input one fixed Internet IP address where the IP analyst software (IPServer) is run.

Step 5: Input PPPoE parameters. Use**[**ENTER**]**or**[**EDIT**]**key to enable PPPoE function (set PPPoE flag as "√"). Input PPPoE username, password and verify password that ISP provided.

Step 6: Save parameters. In "Network" menu, press "Confirm" to save parameters. Reboot DVR to make parameters into effect. In reboot process, DVR will start dialup using PPPoE function. If DVR dialup internet successfully, DVR will display the dynamic internet IP address in "Network" menu.

DDNS : This function is canceled in this series.

Email : This function is canceled in this series.

5.15 PTZ

There is one RS-485 port at DVR rear panel used for PTZ control. You can setup RS-485 parameters to match your PTZ protocol. In main menu, move "Active Frame" to PTZ icon and press**[**ENTER**]**key, you can enter into PTZ menu as following: Shown as fig 5.29

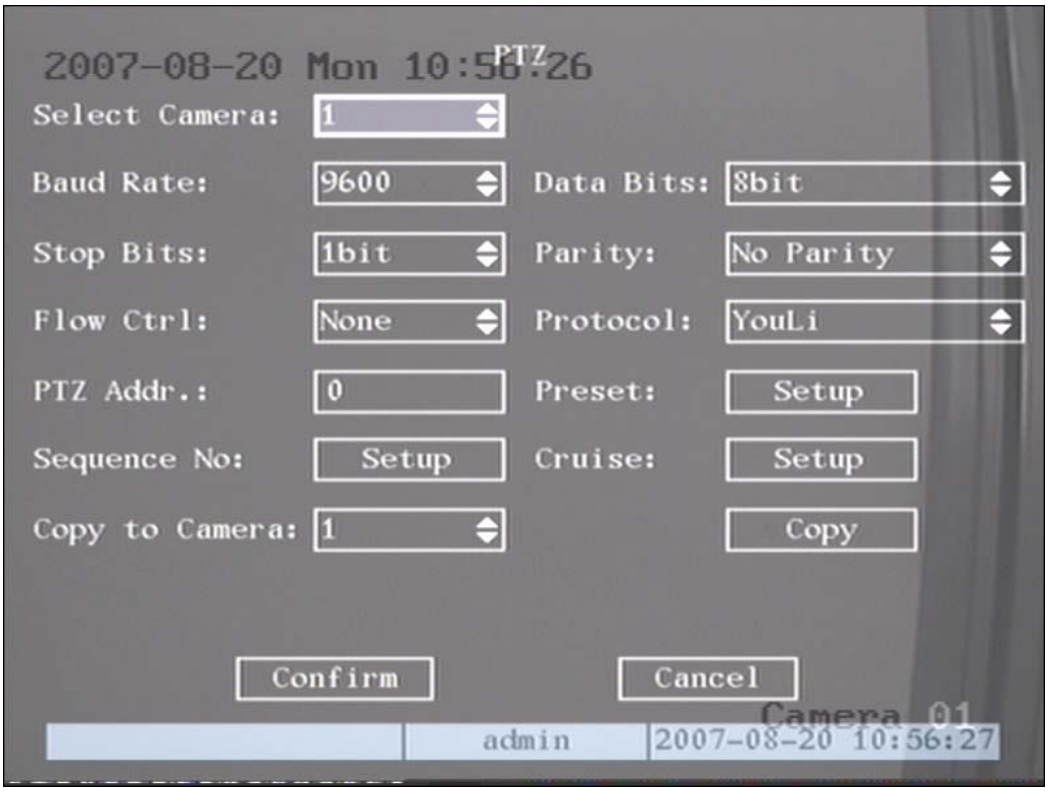


Fig 5.29 PTZ parameters setup

PTZ menu description

Select channel: Select one PTZ camera.

RS-485 parameters: Including baud rate, data bit, stop bit, parity, flow control, etc. These parameters must be the same as those of PTZ. Protocol.

PTZ address: Each PTZ has one different address.

PTZ type: DVR had the following PTZ protocol: YouLi, LinLin-1016, LinLin-820, Pelco-p, DM DynaColor, HD600, JC-4116, Pelco-d WX, Pelco-D, VCOM VC-2000, NetStreamer, SAE/YAAN, Samsung, Kalatel-312, CELOTEX, TLPelco-p, TLHHX-2000, BBV, RM110, KC3360S, ACES, ALSON, INV3609HD, Howell, Tc Pelco P, Tc Pelco D, AUTO-M, AUTO-H, ANTEN, CHANGLIN, DeltaDome, XYM-12, ADR8060, EVI-D30, DEMO-SPEED, DM-PELCO-D, ST832, LC-D2104, HUNTER, A01, TECHYIN, WEIHAN, LG, D-MAX, Panasonic, KTD-348, infinova, PIH-7625, LCU, DennarDome, etc. Other PTZ protocols will be added with the new firmware.

Note: In DVR “PTZ” menu, if you select Pelco-P protocol, when you setup PTZ address, please plus or minus one compared with Camera ID. For example, if camera ID is 2, the DVR PTZ address is set as ID 3.

Preset setup: Preset is using one number to represent the camera's position, zoom, focus and iris. Move "Active Frame" to "Setup" button on the right side of "Preset" item, press**[**ENTER**]**key to enter into preset setup menu. You can save 128 preset number. Please make sure the PTZ support preset function before you setup preset.

Sequence setup: Each sequence is made up of several cruise points. Each cruise point includes one preset number, dwell time and dwell speed. Please make sure the PTZ you are using can support sequence function before you start to setup. You can save 16 sequences.

Cruise setup: Cruise is remembering the track of PTZ movement. Please make sure the PTZ you are using can support cruise function.

Preset setup

In "PTZ" menu, move "Active Frame" to "Setup" button on the right side of "Preset" item, press**[**ENTER**]**, you can enter into "Preset" setup menu: Shown as fig 5.30

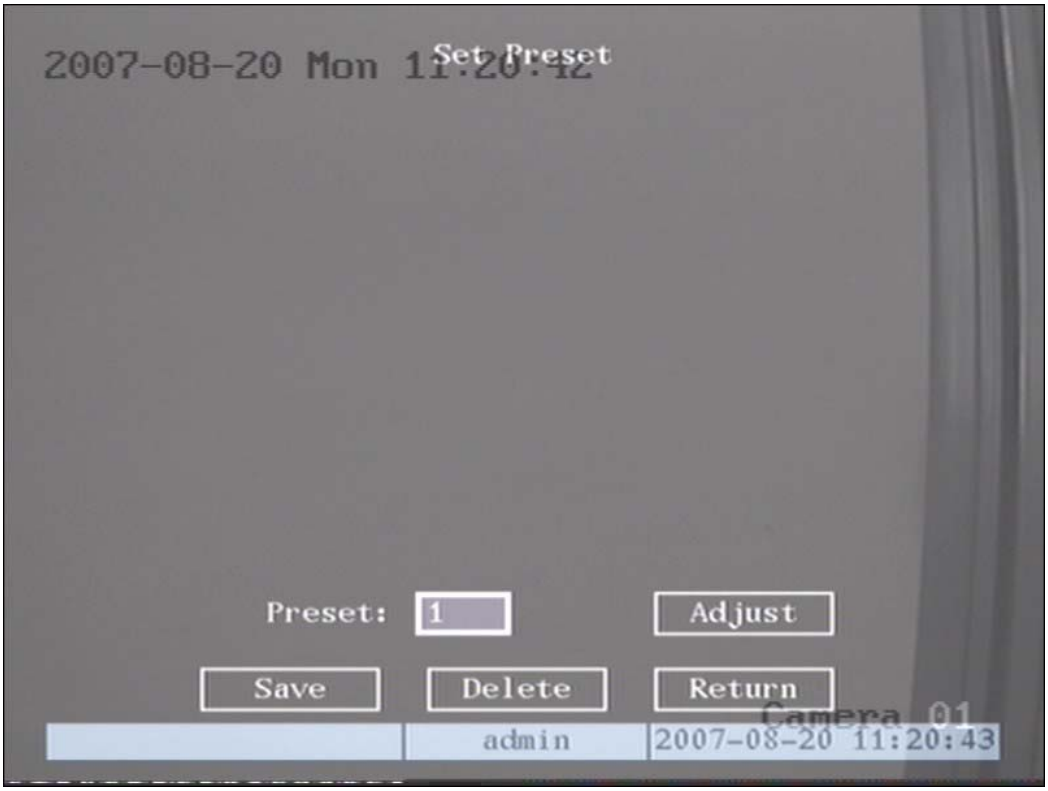


Fig 5.30 PTZ preset setup

Add preset number: You can input preset number (among 1-128) in the edit box. Then press "Adjust" button to enter into PTZ control interface. In PTZ control interface, you can use direction keys to adjust PTZ position, and use**[**IRIS+**][**IRIS-**][**FOCUS+**][**FOCUS-**][**ZOOM+**][**ZOOM-**]**keys

to adjust iris, focus and zoom. After you finish adjusting, press**[**ENTER**]**, then press “Save” button to save the preset number. You can repeat this step to setup other preset numbers.

After you setup all preset numbers, press “Return” button to return “PTZ” menu. In “PTZ” menu, press “Confirm” button to save all parameters.

Delete preset number: In “Preset” setup menu, input one preset number, press “Delete” button, you can delete this preset number.

After deleting, press “Return” button to “PTZ” menu. In “PTZ” menu, press “Confirm” button to save all modification.

Please make sure the PTZ you are using can support preset function.

Sequence setup

In “PTZ” menu, press “Setup” button on the right side of “Sequence No” item, you can enter into “Sequence” setup menu: Shown as fig 5.31

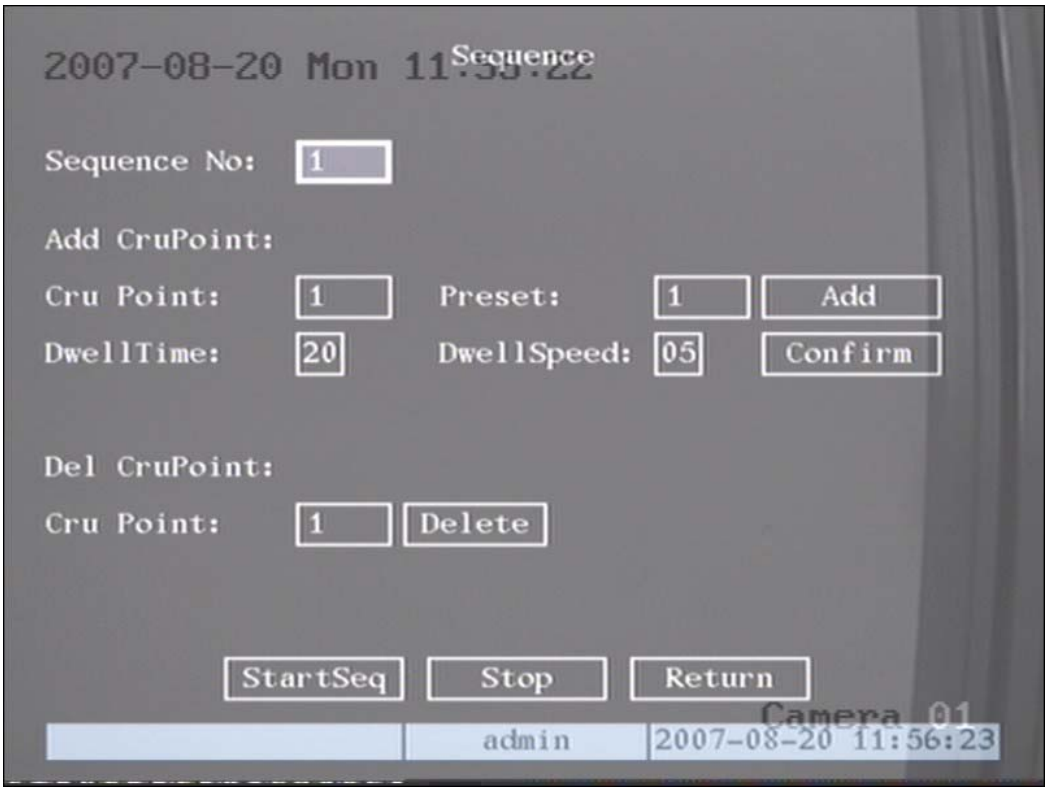


Fig 5.31 PTZ sequence setup

In “Sequence” setup menu, first input the sequence number. The sequence is among 1 --- 16. Each sequence is made up of cruise points, and each cruise point includes preset number, dwell time and dwell speed. Dwell time is the time staying at that preset number. Dwell speed is the speed that PTZ is moved to that preset number.

Press “Add” button to add one cruise point.

Press “Confirm” button to save the cruise point into the sequence.

After you finish setup the sequence number, press “StartSeq” to check the current sequence. Press “StopSeq” button to stop checking.

You can delete cruise points in one sequence.

After you finish sequence setup, press “Return” button back to “PTZ” menu. In “PTZ” menu, press “Confirm” button to save the modification.

Please make sure the PTZ you are using can support sequence function.

Cruise setup

In “PTZ” menu, press “Setup” button on the right side of “Cruise” item, you can enter into “Cruise” setup menu: Shown as fig 5.32

Fig 5.32 Cruise setup

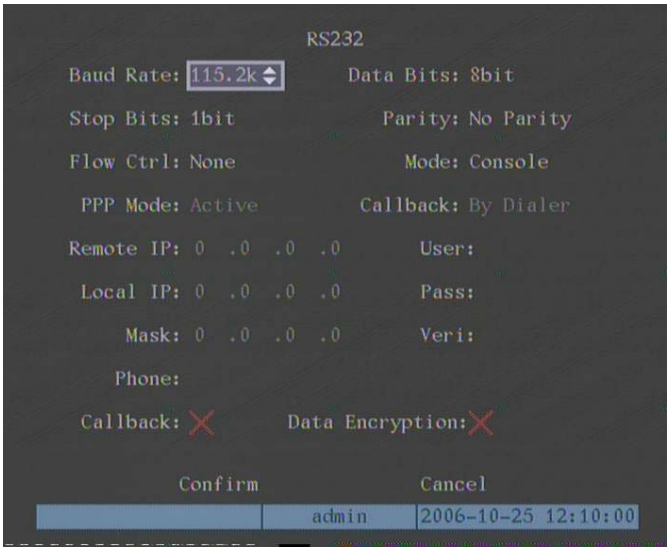
Press “RecCru” button, you will enter into “PTZ control” interface. You can start controlling PTZ with direction keys, press**[**ENTER**]**to save the operation track and return “Cruise” setup menu. Press “StartCru” button to repeat the PTZ track until you press “Stop” button.

Press “Return” button back to “PTZ” menu. In “PTZ” menu, press “Confirm” button to save this cruise.

Please make sure the PTZ you are using can support cruise function.

5.16 RS232 setup

There is one RS-232 port at DVR rear panel. In main menu, move "Active Frame" to "RS232" icon and perss**[**ENTER**]**key, you enter into "RS232" setup menu:



RS232 menu description

RS-232 parameters: Including baud rate, data bit, stop bit, parity, flow control, etc.

Work mode: The RS-232 can be used as "Console", "PPP" or "Transparent Channel".

Console: Connect with PC serial port. You can use HyperTerminal or NetTerm to control it.

PPP: Connect Modem, using PSTN to transfer video image.

Transparent channel: Connect serial devices. Remote PC can control these serial devices through network.

PPP Mode: Only used when work mode is "PPP". There are two options: "Active" and"Passive". "Active" means DVR will diaup through PSTN. "Active" function is not available. "Passive" means DVR will wait for dialup.

Callback mode: Only used when work mode is "PPP". There are two options: "By Dialer" and "Preset Tel'. This function is not available.

Remote IP: Only used when work mode is "PPP". This IP is defined for remote PC that will connect DVR through PSTN.

Local IP: Only used when work mode is "PPP". This IP is defined for DVR.

Mask: Only used when work mode is "PPP". Remote IP and Local IP are in the same sub net.

Username, password and Verify password: Only used when work mode is "PPP". Used for login when remote PC dialup through PSTN.

Phone: Only used when work mode is "PPP" and PPP mode is "Active". It is the phone number of remote PC.

Callback and Data Encryption: Only used when work mode is "PPP". They are not available.

Confirm: Save parameters and return main menu.

Cancel: Abort modification and return main menu.

Example: PPP (Modem) passive dialup through PSTN

There are two Modems. One is connected DVR RS-232 port with DCE cable. The other is connected with PC COM port.

Setup at DVR end

Step 1: RS232 setup Setup baud rate, data bit, stop bit, parity and flow control. They must be the same as those of modem connected with PC.

Step 2: Video setup In "Recording" menu, select the camera you want to transfer through

PSTN. If you set CIF resolution, we suggest you set frame rate as 1 FPS. If you set QCIF resolution, the frame rate can be selected under 4FPS. You can adjust bit rate, resolution and frame rate according to real conditions.

Step 3: Save setup In "Recording" menu, press "Confirm" button to save parameters.

Step 4: Setup Modem used on DVR side Use DCE calbe to connect Modem with PC serial port. You can use HyperTerminal or NetTerm to setup modem:

AT&F ---- Retore default parameters (Generally, Modem is hard flow control)

AT&S0=1 ---- Set Modem as answer

ATE0 ---- Not display the input characters

ATQ1 ---- Commit instruction and not display

AT&W&W1 ---- Save parameters

Step 5: Use DCE cable to connect Modem with DVR RS232 port.

Setup at PC end

Step 1: Setup Modem used on PC side. Use DCE calbe to connect Modem with PC serial port. You can use HyperTerminal or NetTerm to setup modem:

AT&F ---- Retore default parameters (Generally, Modem is hard flow control)

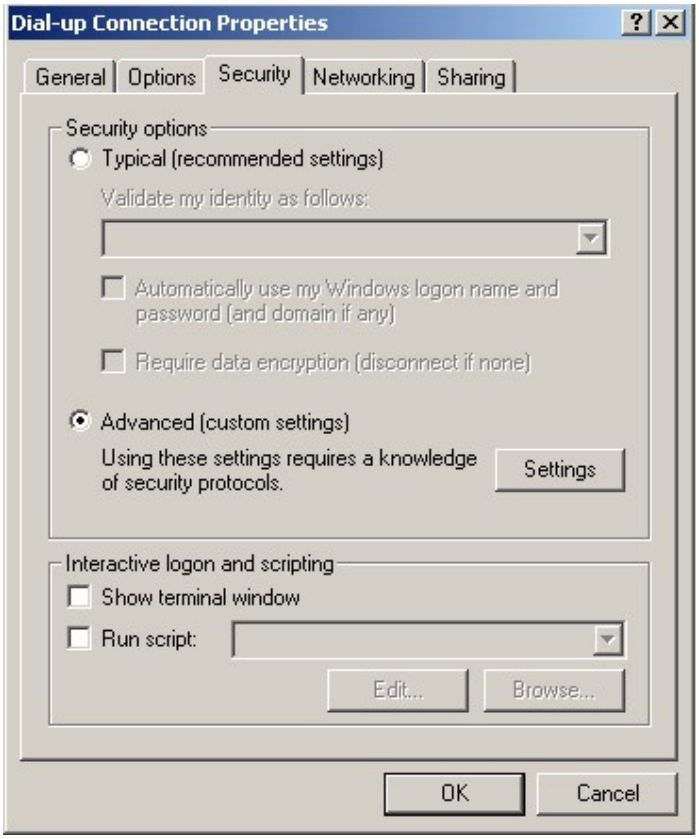
AT&W&W1 ---- Save parameters

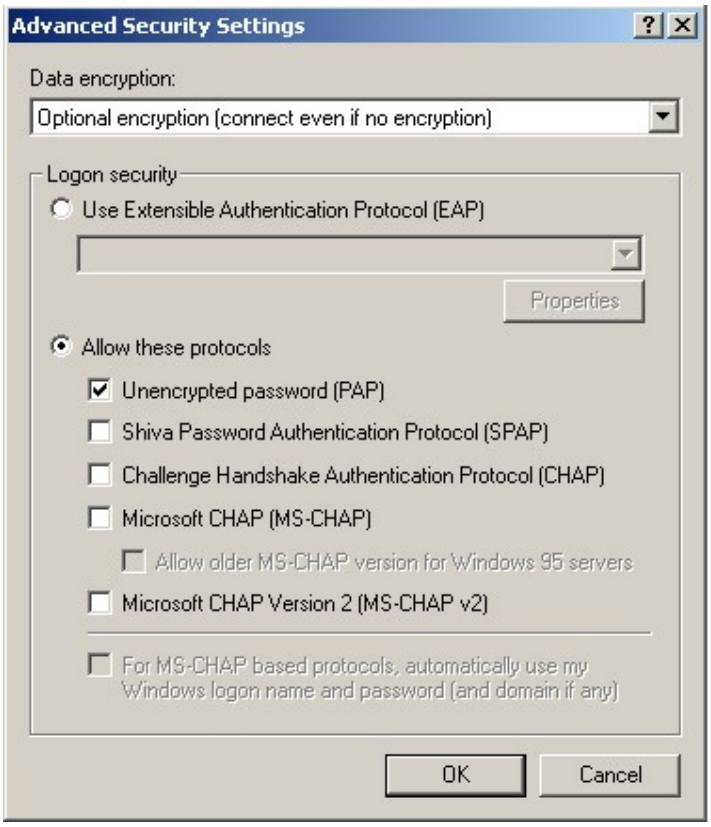
Step 2: Open "Network and Dial-up Connections" in control panel, then press "New Connection…", select "Dial-up to private network" according to the guide. Select the corresponding MODEM, input the telephone no. to be dialed in the next step, finish it according to the guide. At this time, you will find a new program named "Dial-up Connection" in "Network and Dial-up Connections" folder.

Setup should be specially pay attention to:

Open the properties of the new-established dialup program, select "Advanced"(custom settings) in security option, press setup, set it in the popup dialogue box that is "Advanced

Security Settings" as follows:




Advanced Security Settings
Data encryption:
Optional encryption (connect even if no encryption)
Logon security
Use Extensible Authentication Protocol (EAP)
Properties
Allow these protocols
Unencrypted password (PAP)
Shiva Password Authentication Protocol (SPAP)
Challenge Handshake Authentication Protocol (CHAP)
Microsoft CHAP (MS-CHAP)
Allow older MS-CHAP version for Windows 95 servers
Microsoft CHAP Version 2 (MS-CHAP v2)
For MS-CHAP based protocols, automatically use my Windows logon name and password (and domain if any)
OK
Cancel

Step 3: Establish the dialup connection

Select the Modem connected with PC just like the dialup network connection, input the telephone number connected with DVR's modem. Input the username, password. They must be the same as that DVR PPP setup.

Step 4: During the dialup connection, it will give the message of "verification of username and password", after successfully verification; the message will be given "on process of register in PC". The process is the same as the common dialup connection.

Step 5: After successful dialup, network will designate the "remote IP" address to PC, e.g. the set 192.1.0.1. User can Ping-link the assigned IP address through Ping command, and can Ping-link DVR. Please refer to the following picture.

C:\>ipconfig
Windows 2000 IP Configuration
PPP adapter
Connection-specific DNS Suffix . :
IP Address. . . . . : 192.1.0.1
Subnet Mask . . . . . : 255.255.255.255
Default Gateway . . . . . : 192.1.0.1
C:\>ping 192.1.0.2
Pinging 192.1.0.2 with 32 bytes of data:
Reply from 192.1.0.2: bytes=32 time=130ms TTL=64
Reply from 192.1.0.2: bytes=32 time=130ms TTL=64
Reply from 192.1.0.2: bytes=32 time=130ms TTL=64
Reply from 192.1.0.2: bytes=32 time=130ms TTL=64
Ping statistics for 192.1.0.2:
Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
Minimum = 130ms, Maximum = 130ms, Average = 130ms

Step 6: You can preview the image of 192.1.0.2 by using client-end software.

Chapter6 Utilities

There are many tools in “Utilities” menu. Including “SavePara”, “RestorePara”, “Upgrade”, “Hard Disk”, “Stop Alarm Out”, “Reboot”, “Power Off”, “View Log” and “System Info”.

Enter into “Utilities” menu: Shown as fig 6.1

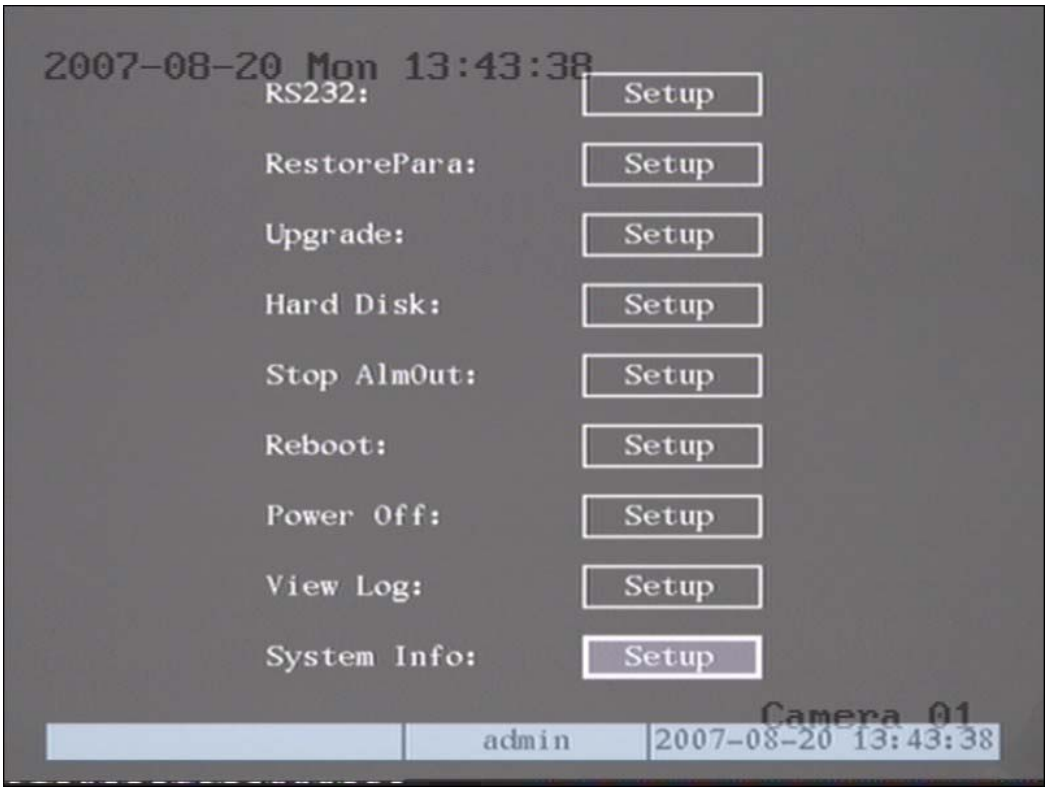


Fig 6.1 Utilities

6.1 Restore Parameters

Restore factory parameters for DVR. The IP address, gateway and port number will not be restored. Shown as fig 6.2

Fig 6.2 Restore parameters

6.2 Upgrade

You can use this function to upgrade the firmware. Please confirm the language is matched.

Press “Upgrade” icon, in the pop-up dialog, you can select either “FTP” or “USB” upgrade mode. Shown as fig 6.3

Fig 6.3 Upgrade

If you select “FTP” mode, you will enter into “FTP Upgrade” menu:

Fig 6.4 FTP IP setup

Input the ftp server IP and press[ENTER]key. DVR will connect with FTP server through network and download the firmware file.

If you select “USB” mode, please make sure you connect one USB flash memory with DVR and the firmware file is in it’s root directory.

Reboot after successfully upgrading, the system will use the new firmware.

6.3 Hard Disk Management

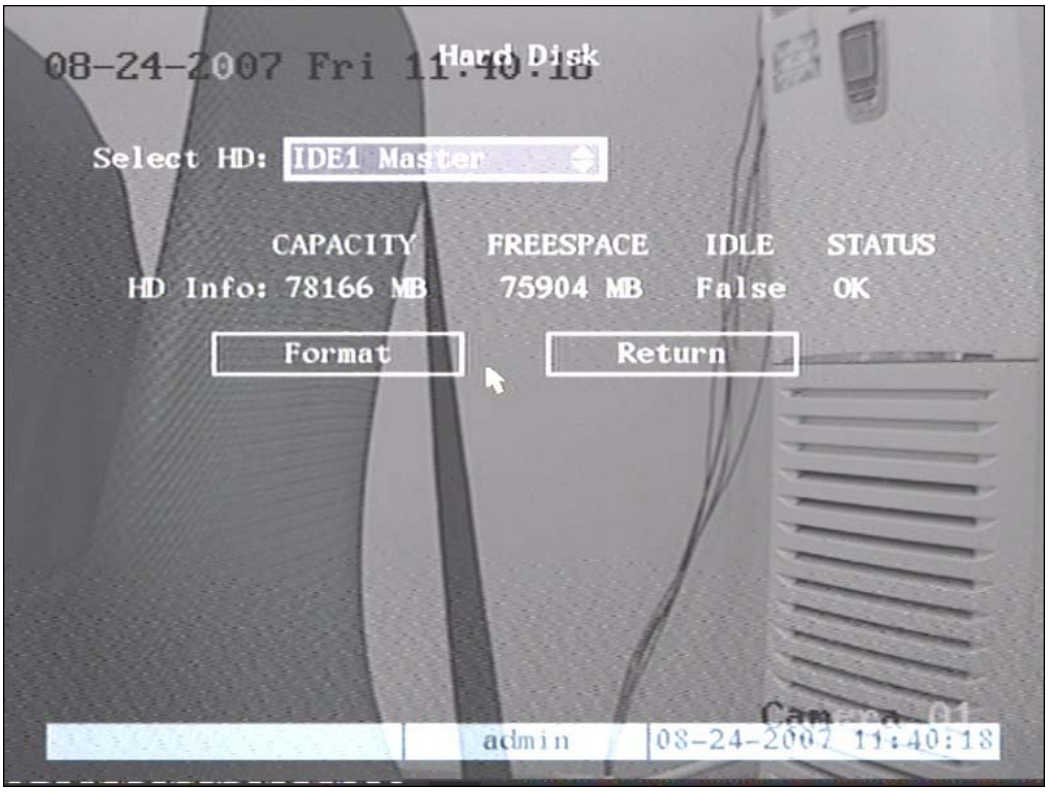


fig 6.5 Hard Disk setup

Check HDD work status

Capacity, Free space, Stand by or not, Normal status or not.

Format HDD

Before formatting stop all recording. After formatting, you must reboot DVR, otherwise DVR will not work normally.

6.4 Stop Alarm Out

Clear the alarm output manually.

6.5 Reboot

Reboot DVR.

6.6 Power Off

Make DVR be ready for shutting down, turn of the switch on the rear panel

6.7 View Log

To view the log recorded in DVR HDD.

In “Utilities” menu, press “View Log” to enter into “Log” menu: Shown as fig 6.6

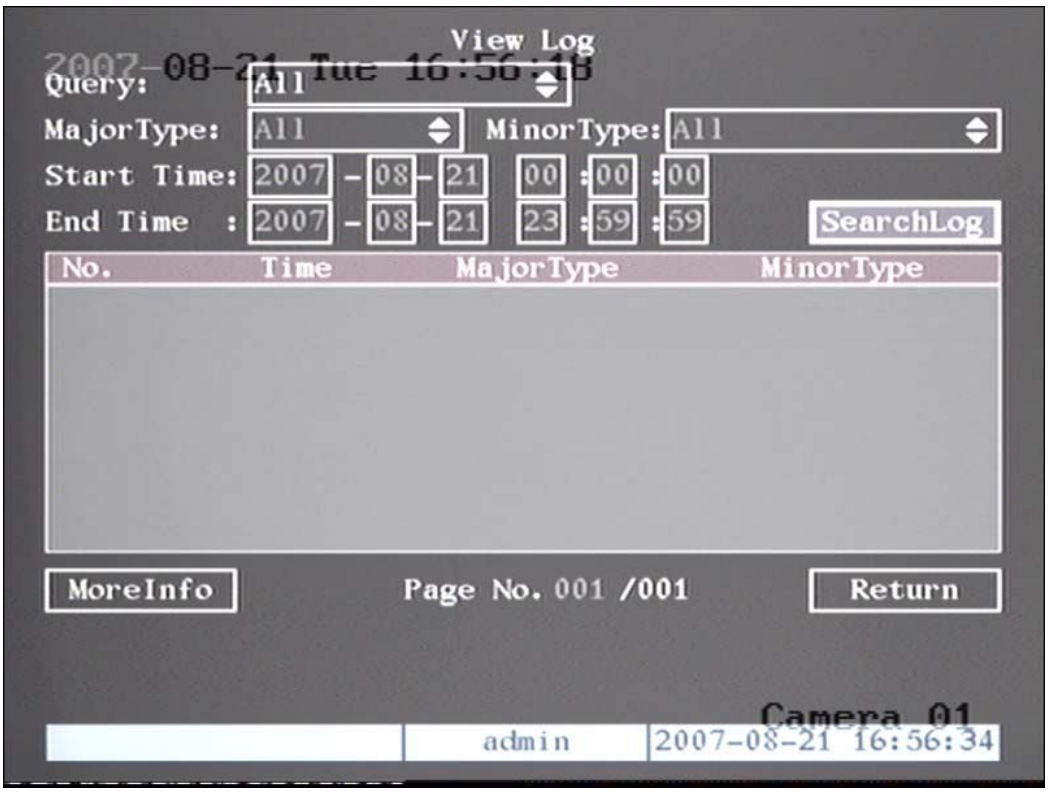


Fig 6.6 View log

If you want to view the log based on default option, just press**[**ENTER**]**key. DVR will list all matched information. Also you can select options to search (By Type, By Date, By Type&Date).

By Type

To view log information of the assigned type.

Type is divided into "Major type" and "Minor type". Major type includes operation, alarm, exception and all.

For operation major type, there are many minor types, including Power On, Shut Down, Abnormal Shut, Panel Login, Panel Logout, Panel Config, Panel File Play, Panel Time Play, Local Start Record, Local Stop Record, Panel PTZ, Panel Preview, Panel Set Time, Local Upgrade, Net Login, Net Logout, Net Start Record, Net Stop Record, Net Start Transparent Channel, Net Stop Transparent Channel, Net Get Parameter, Net Config, Net get Status, Net Alert On, Net Alert Off, Net Reboot, BiComStart (Start Voice Talk), BiComStop (Stop Voice Talk), Net Upgrade, Net File Play, Net Time Play, Net PTZ.

For alarm major type, the minor type includes: External Alarm In, External Alarm Out, Motion Detect Start, Motion Detect Stop, View Tamper Start, View Tamper Stop.

For exception major type, the minor type includes: Video Signal Loss, Illegal Access, Hard Disk Error, Hard Disk Full, IP Conflict, DCD Lost.

For example: The steps of viewing alarm log.

Step 1: For "Query" item, select "By Type" to active "Major Type" and "Minor Type" items.

Step 2: For "Major Type" option, select "Alarm" option. For "Minor Type" option, select one of following options: All, External Alarm In, External Alarm Out, Motion Detect Start, Motion Detect Stop, View Tamper Start, View Tamper Stop .

Step 3: Move "Active Frame" to "Search Log" button, press**[**ENTER**]**key to start searching.

Step 4: When searching is finished, DVR will list all matched alarm information. In the list box, the information includes: Index, Occur Time, Major Type, Minor Type, Panel User, Net User, Host Address, Para. Type, Channel No, HDD No, Alarm In and Alarm Out. You can press "More Info" button for more information, also select page number to view more information.

Step 5: Press "Return" button back to "Utilities" menu.

By Time

View the log between one time period.

Step 1: Select “By Time” for “Query” option to active “Start Time” and “Stop Time” items.

Step 2: Input start time and stop time.

Step 3: Move “Active Frame” to “Search Log” button and press**[**ENTER**]**key to start searching.

Step 4: After finish searching, DVR will list the matched log information.

Step 5: Press “Return” button back to “Utilities” menu.

By Type&Date

View one kind of log in the assigned time period.

Step 1: Select “By Type&Time” for “Query” option to active “Major Type”, “Minor Type” “Start Time” and “Stop Time” items.

Step 2: Select “Operation” for major type and select one option for minor type.

Step 3: Input start time and stop time.

Step 4: Move “Active Frame” to “Search Log” button and press**[**ENTER**]**key to start searching.

Step 5: After finish searching, DVR will list the matched log information.

Step 6: Press “Return” button back to “Utilities” menu.

6.8 System Information

Press “System Info” icon in “Utilities” menu, you can get DVR system information.

Appendix A Mouse control function

1. in the preview interface

Double-click the left key

1. Switch to the most pictures when viewing single picture.
2. Switch to full screen mode when viewing multi-pictures. Back to previous multi-pictures when double click again.

Scroll wheel forward

Switch to previous screen

Scroll wheel backward

Switch to next screen

Single-click the right key

Pop up function menu including “main menu” “single picture 1-4ch” “multi picture 1/4” “next preview” “ PTZ control” “manual record” “close status”

2. PTZ interface

Double-click the left key

Move to the center of the screen (For SAE\YAAN protocol)

Drag the left key

Select an area to zoom in (For SAE\YAAN protocol)

Single click the left key

If you selected an area for zooming in this action will save the poison as No.60 and zoom in the area (For SAE\YAAN protocol)

Scroll wheel forward

Switch to previous channel

Scroll wheel backward

Switch to the next channel

3. Channel name or OSD position configuration interface

Drag the left key

A rectangle frame following with cursor

Single click the left key

Pop-up menu including confirm & cancel

4. Area configure interface

Right click

Pop-up menu including confirm、cancel、clear、full(this option only appear in motion detect area configuration)

Drag the left key

Extend or shrink area

Moving

The primary grid following with cursor

5. Test input interface

Click the left key

1. pop up soft keyboard
2. Input text
3. Save and exit

Click the right key

Cancel the text and exit the edition

Scroll wheel forward

Cursor go to the front character

6. Playlist interface

Click the left key

Select the file to copy or cancel

Scroll wheel forward

Select the front file

Scroll wheel backward

Select the next file

Signal-click the right key

Cancel and return back to the preview interface.

Double-click the left key

Play the selected file

7. User interface

Double-click the left key

Enter into the selected user's privileges setting interface

Single-click the right key

Cancel the operations you did and back to previous interface

Scroll wheel forward

Select previous file

Scroll wheel backward

Select next file

Drag the left key

Select an area to zoom in (For SAE\YAAN protocol)

Appendix B HDD Capacity Calculation

Calculate total capacity needed by each DVR according to video recording (video recording type and video file storage time).

Step 1: According to Formula (1) to calculate storage capacity q_i that is the capacity of each channel needed for every hour, unit Mbyte.

$$q_i = d_i \div 8 \times 3600 \div 1024 \quad (1)$$

In the formula: d_i means the bit rate, unit Kbit/s

Step 2: After video time requirement is confirmed, according to Formula (2) to calculate the storage capacity m_i, which is storage of each channel needed unit Mbyte.

$$m_i = q_i \times h_i \times D_i \quad (2)$$

In the formula:

h_i means the recording time for each day (hour)

D_i means number of days for which the video shall be kept

Step 3: According to Formula (3) to calculate total capacity (accumulation) q_T that is needed for all channels in the DVR during **scheduled video recording**.

$$q_T = \sum_{i=1}^{c} m_i \quad (3)$$

In the formula: c means total number of channels in one DVR

Step 4: According to Formula (4) to calculate total capacity (accumulation) q_T that is needed for all channels in DVR during **alarm video recording (including motion detection)**.

$$q_T = \sum_{i=1}^{c} m_i \times a\% \quad (4)$$

In the formula：$a\%$ means alarm occurrence rate

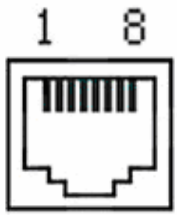
Appendix C
DVR Connect Cable Definition

1 RS-485 connect cable made method

Material and tool

One twist cable (8 pins), one standard RJ45 connector and one tool special for RJ45.

RJ45 introduction



Pin definition

To make the connect cable according the follows. As to left point of RJ45 head, 1st and 2nd cables are the anode and cathode line for sending, 3rd and 4th cables are the anode and cathode line for receiving, 7 is the shared grounding line:

Pin definition for Standard RS-485 serial port RJ45 plug-in

2 RS-232 connect cable made method

DS-7000HI has standard DB9 RS-232 interface, like PC COM port.

Pin definition

I means DVR input and O means DVR output.

Pin index	Name	I/O	Description
1	DCD	I	Carrier Detect
2	RXD	I	Receive Data
3	TXD	O	Transfer Data

4	DTR	O	Terminal Device Ready
5	GND		Ground
6	--	--	--
7	RTS	O	Request to Send
8	CTS	I	Clear Data

3 UTP network connect cable made method

Material and tool

One twist cable (8 pin, the length can be defined as to the actual demand, but must be within 100m), 2 standard RJ45 head, one tool for RJ45.

Suggestion: have a network cable test tool to test each cable made.

Pin definition

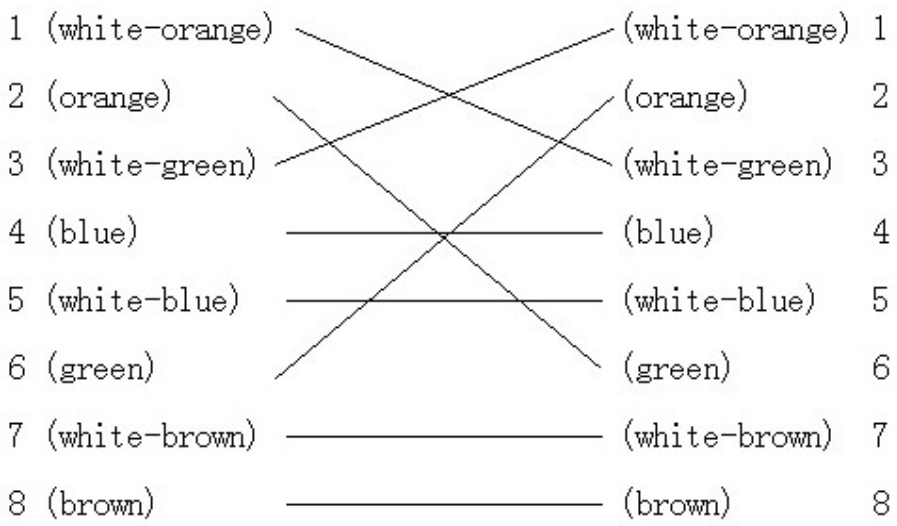
To make the network cable according to the actual situation, there are two options:

(1) Use the following method to make the network cable when DVR is connected with network hub or switch.

1 (white-orange) (white-orange) 1
2 (Orange) (Orange) 2
3 (white-green) (white-green) 3
4 (blue) (blue) 4
5 (white-blue) (white-blue) 5
6 (green) (green) 6
7 (white-brown) (white-brown) 7
8 (brown) (brown) 8

The corresponding relationship of the direct cable

(2) Use the following method to make the cross network cable when DVR is directly connected with client-end PC.



The corresponding relationship of cross cable

Appendix D Troubleshooting

Failure	Possible reasons
After plugging in power, turning on the power switch, "POWER" light in front Panel does not turn on, and fan does not work.	1) Power cable is broken. 2) Power supply is broken.
After plugging in power, turning on the power switch, "POWER" light in front panel turn to green while fan does not work.	1) Front panel cable is broken. 2) Fan is broken.
After plugging in power, turning on switch, "POWER" light turn to green, the indicator lights in the panel turn on at the same time, but fan does not work.	The ATX plug in main board is not well plugged in.
DVR continuously reboots after start up, and makes a sound like "di" every 10 seconds.	1. Upgrade the wrong firmware 2. Compression board has problems. 3. Main board has problems.
There are no images in the monitor connected with VOUT after DVR is started.	1. The cable connected with the monitor is broken. 2. Real board of DVR has problems. 3. Main board of DVR has problems.
Cannot find the hard disk in reboot process.	1) Hard disk cable is broken. 2) The power cable of hard disk is not connected. 3) Hard disk is broken.
DVR can not control PTZ through RS-485 port.	1) RS-485 cable is not connected correctly or broken. 2) PTZ parameters error. 3) RS-485 port of DVR is broken.
Client software can not view DVR live image.	1) Network is error. 2) Connect wrong DVR (wrong IP, port number, username or password, ect). 3) Old player SDK (playm4.dll)

Notes:

1) Place the DVR in well ventilated space so that it operates within the allowed range of temperature and humidity as in specification.

2) If the circuit board is wet, dust on circuit board can cause a short circuit. The circuit board, plug and socket, housing fan and housing should be cleaned by brushing regularly.